

# MARINE RECORD

ESTABLISHED 1878.

VOL. XXII, No. 51.

CLEVELAND---DECEMBER 21, 1899---CHICAGO.

\$2.00 Per Year. 5c. Single Copy.

## LAKE CARRIERS' ASSOCIATION.

To consider and take action upon all general questions relating to the navigation and carrying business of the Great Lakes, maintain necessary shipping offices and in general to protect the common interests of Lake Carriers, and improve the character of the service rendered to the public.

<b>PRESIDENT.</b>	
FRANK J. FIRTH,	Philadelphia.
<b>1ST VICE-PRESIDENT.</b>	
CAPT. THOS. WILSON,	Cleveland.
<b>SECRETARY</b>	
CHARLES H. KEEP,	Buffalo.
<b>TREASURER.</b>	
GEORGE P. MCKAY,	Cleveland.
<b>COUNSEL</b>	
HARVEY D. GOULDER,	Cleveland.
<b>EXECUTIVE AND FINANCE COMMITTEE,</b>	
JAMES CORRIGAN, Chairman,	Cleveland.
<b>COMMITTEE ON LEGISLATION.</b>	
GIBSON L. DOUGLAS, Chairman,	Buffalo.
<b>COMMITTEE ON AIDS TO NAVIGATION</b>	
GEORGE P. MCKAY, Chairman,	Cleveland.

### DAM AT NIAGARA INJURIOUS.

Dr. Hal C. Wyman has just called attention to an important phase of the question of regulation of lake levels by a dam placed at the head of Niagara river; namely, its effect on the public health, says the Sunday News-Tribune. Congressman Corliss has already introduced a bill in the present session of Congress, for the building of this dam. Dr. Wyman is thoroughly posted on the geography of the lake region and its geology as well. His father, the late Dr. Wyman, was one of the very prominent physicians of Detroit, of the generation just past, so Dr. Hal C. Wyman speaks partly from his father's experience, as well as from his own. He said:

"I do not pretend to speak upon the hydraulics of this problem, whether a dam at the head of Niagara river would raise the level of Lake Erie, the Detroit river and Lake St. Clair, as stated or not. I will leave the discussion of such matters to the engineers. Let it be granted that the surface of Lake Erie will be raised from three to four feet, as claimed, and the Detroit river and Lake St. Clair proportionately. What I am interested in is the results that would follow to the public health. Until within 20 years this was a very malarial region. This was true of the whole lake region, but particularly about Lake St. Clair, the head of Lake Erie and along the shores of the Detroit river.

"It was so bad that for most people it was a case of take quinine or die. There was a great deal of low, marshy ground, the soil saturated with water for a considerable portion of the year. These swamps were the fruitful source of trouble. Our early history is full of evidence on this point. More soldiers died at Fort Meigs from malaria than fell at Santiago. The black swamp between Sandusky and Toledo was terribly severe and destructive upon Gen. Harrison's army.

"But for the past 20 years this has been a healthy region. Malaria has practically disappeared, and it has come about through the drainage of swamps and marshes. Channels have been cut through to the river and lake, bars removed from before the mouths of sluggish rivers below us and the surface of the Detroit river has been lowered slightly by the improvements in the channels, until the swamp region has been pretty generally reclaimed. The character of the vegetation growing upon this soil has changed; the aquatic and semi-aquatic plants have been replaced by a very different growth, even trees and shrubs where once was nothing but reeds.

"Now, what would be the result to this reclaimed soil of

raising the levels as proposed? Three or four feet raise in the level of Lake Erie would make all kinds of trouble all the way from Trenton around to the east shore of Sandusky bay, making the shore of the lake a vast swamp. There are places where a two or three or four foot rise would send the water for miles over low reclaimed lands, converting them back into marsh, breeding malaria. The Black swamp would be recreated. The Maumee valley would be again a great swamp and Toledo be rendered unhealthy.

Take the raise in the Detroit river. It is proposed to gain all of two or three feet over the shoals above and below the Lime Kilns. Such a rise as that in the Detroit river would bring the swamps home to Detroit. The whole upper end of Grosse Ile will be converted into a swamp almost as far down as the steamboat landing. Wyandotte will be largely submerged. All the money spent in the reclaiming of land about Ecorse creek and the River Rouge will have been in vain, and the old swamps will again poison the air of our own city. The Riviere Canard, below Sandwich, will be an inlet for back water to convert some miles of low country there into saturated land. The character of the vegetation on these lands will be changed. Lands now high and dry will need to be drained, and the whole long process of getting the country on a healthful basis from malaria, must be gone over again. To prevent these consequences some millions must be spent in dykes or in drains. If the rise is actually accomplished in the level of Lake St. Clair, there will be swamp lands developed along the shore above the village of Grosse Pointe, besides trouble at the Flats, and along many miles of the Canadian shore.

"Then how about the Detroit sewers; it looks as though these would be submerged enough to make trouble for the city and prove a menace to public health.

"It seems to me a Congressman had better father a bill for improving the architecture of the lake marine, so that a vessel can carry more on a less draft, instead of pushing a measure so dangerous to public health as the dam at Niagara."

### DEEP WATERWAY COMMISSION.

The United States Board of Engineers, designated by the President to make surveys and examinations of deep waterways and routes thereof between the Great Lakes and Atlantic tidewaters, has submitted a preliminary report, which recommends the regulation of the Lake Erie level by controlling the discharge through the Niagara river by a system of fixed weirs, built near the head of the Niagara river, and a series of sluices, to be operated in connection with the weirs, so as to control the discharge of the lake, and reduce the variation of its level to a small amount.

### POSTAL SHIPMENTS TO RUSSIA.

United States Consul Monaghan, at Chemnitz, Germany, transmits the following instructions relative to postal shipments to Russia: When a letter is found in a package sent by post, note of same will be made and signed by the customs official in charge. This note will contain the name of the place whence the letter comes, whither it is to go, when sent, and for whom, and from whom. The letter is to be taken out and sent with the above mentioned note to the postal authorities at the place whence the package came.

A package containing a letter is to be sent forward to the addressee, under general regulations. The letter will also be delivered upon the party with whom it is addressed paying a fine. In case such payment is refused, the letter is to be forwarded to the general postoffice. In cases where packages from foreign parts contain letters or notes or circulars in open envelopes, even though they have the character of correspondence, such enclosures will not be removed. The package with its enclosures, will be delivered to the parties to whom it is addressed.

### CONGRESSIONAL COMMITTEES.

Naval Affairs.—Messrs. Charles A. Boutelle, Maine; Geo. E. Foss, Illinois; Alston G. Dayton, West Virginia; Henry C. Loudensinger, New Jersey; R. B. Hawley, Texas; Thos. S. Butler, Pennsylvania; Melville Bull, Rhode Island; Sydney E. Mudd, Maryland; James E. Watson, Indiana; Victor H. Metcalf, California; Amos J. Cummings, New York; Adolph Meyer, Louisiana; Farrish Carter Tate, Georgia; John F. Rixey, Virginia; W. W. Kitchin, North Carolina; W. D. Vandiver, Missouri; and Charles K. Wheeler, Kentucky.

Merchant Marine and Fisheries.—Messrs. Charles H. Grosvenor, Ohio; Albert J. Hopkins, Illinois; James H. Young, Pennsylvania; Archibald Lybrand, Ohio; William S. Greene, Massachusetts; E. S. Minor, Wisconsin; Fred C. Stevens, Minnesota; W. L. Jones, Washington; J. W. Fordney, Michigan; Frank C. Wachter, Maryland; John F. Fitzgerald, Massachusetts; Marion De Vries, California; Thos. Spight, Mississippi; William D. Daly, New Jersey; J. E. Ramsdell, Louisiana; William Astor Chanler, New York; and John H. Small, North Carolina.

Interstate and Foreign Commerce.—Messrs. William P. Hepburn, Iowa; Loren Fletcher, Minnesota; James S. Sherman, New York; Irving P. Wanger, Pennsylvania; Charles F. Joy, Missouri; John B. Corliss, Michigan; James F. Stewart, New Jersey; John A. Burham, California; R. B. Hawley, Texas; James R. Mann, Illinois; William C. Lovering, Massachusetts; William McAleer, Pennsylvania; Robert C. Davey, Louisiana; William C. Adamson, Georgia; Robert W. Davis, Florida; Nicholas Muller, New York; and D. W. Shackelford, Missouri.

Rivers and Harbors.—Messrs. Theodore E. Burton, Ohio; Walter Reeves, Illinois; Blackburn B. Dovener, West Virginia; Roswell P. Bishop, Michigan; Ernest F. Acheson, Pennsylvania; Page Morris, Minnesota; De Alva S. Alexander, New York; Thomas H. Tongue, Oregon; G. P. Lawrence, Massachusetts; J. H. Davidson, Wisconsin; Thomas C. Catchings, Mississippi; Rufus E. Lester, Georgia; John H. Bankhead, Alabama; Philip D. McCulloch, Arkansas; Albert S. Berry, Kentucky; Stephen N. Sparkman, Florida; and Thomas H. Ball, Texas.

### CANAL CONDITIONS

The Buffalo Commercial gives statistics to show that the number of canal boats clearing from Buffalo has fallen off materially in the past few years, which means that when a canal boat of the present style of construction becomes worn out and useless it is not replaced, and that as a consequence of lack of boats, shipments by canal have been much less this season than they would otherwise have been, adding anent canal conditions in general: "No new boats will be built until new and better conditions of canal navigation are assured. The present type of canal boat, with a capacity of 8,000 bushels of wheat, cannot compete in any large sense with the railroads, or with prospective Canadian water routes. It can be demonstrated that with certain practicable and justifiable lock and canal enlargements the Erie canal route can cover and hold a very large share of the Western grain traffic but there will be small use for old-time canal boats under the new conditions. Naturally, no one has been putting good money into back-number craft for the last two or three years. The old tonnage is depreciating rapidly and will gradually disappear. If the State of New York is equal to the occasion and brings its great water route abreast of modern requirements, there will be no lack of modern barges ready to take advantage of the opportunities offered. Meanwhile, pending the settlement of this vital question and the completion of the necessary changes in the locks and canal bed, many old boats will go out on commission and canal clearances will continue to decline."





## BUFFALO.

*Special Correspondence to The Marine Record.*

Mr. John C. Fitzpatrick, general agent for the Clover Leaf line, took a trip to Cleveland this week.

Several bodies have been picked up on the north shore, and identified as members of the crew of the lost Canadian steamer Niagara.

The last cargo of the season was loaded by the Bradley line steamer Ranney, on Friday last, she arrived at Milwaukee all well, freight \$1.25 per ton.

The only new tonnage registered out of the port this week is the steamer C. Person's Sons, gross 49 and net 34 tons, built here and hailing from this port.

More transfers of ownership in floating property took place this season than ever known before. The largest individual investment was that of sixteen vessels in all, purchased by Mr. James Corrigan, of Cleveland.

Remedies for New York's gradual slump from the position of America's premier grain export city were asked of representative Chicago dealers. The consensus of opinion was that the metropolis' hopes for renewed western favor lay in the reconstruction of the Erie canal and the granting of railroad and transfer rates that at least would equal those of other Atlantic ports.

The Venezuela, of the Davidson fleet, arrived here on Tuesday with what is supposed to be the last cargo of grain for the season, it is reported that Capt. Davidson personally insured the cargo, besides staking the freight and the value of his steamer on the safe conduct of the adventure, but few owners are in a financial position to so act, and there are fewer still possessed of nerve enough to tackle such a proposition.

Congressman Alexander will formulate and introduce a bill for a marine hospital in Buffalo, and it was concluded that the bill should call for an appropriation of \$125,000. This will purchase the land and build as large a hospital as is now needed, but the building will be so erected that wings can be added later as the demand for more room increases. The Surgeon General said a hospital with room for 75 beds would supply the present demand of Buffalo.

The Donnelly Contracting Co. will employ about 200 men steady all winter on their breakwater extension contract. In the early spring the force will be increased to between 500 and 600, when work will be continued until the fall. Work on the concrete superstructure will be begun early next season, possibly about June 1. At present the company has on hand 1,750,000 feet of lumber ready for operations in the spring, so there will be no delay in waiting for the arrival of lumber after the opening of navigation.

The Union Dry Dock Co., have a good deal of new work contracted for as well as a large amount of repair and dry dock work. A large cargo steamer will be built this winter to the order of the Lehigh Valley Trans. Co., A fire boat for the city of Buffalo, and four steel drill boats, each to be 50 feet in length, 16 feet beam and 5 feet deep, to be used for rock drilling purposes in the harbor contracts secured by the firm of Dunbar & Sullivan. The two former contracts were placed some time ago but there has been some detention experienced in receiving material from the Carnegie Steel Co., Pittsburg.

The large steel steamer S. F. B. Morse, owned by the Bessemer Steamship Co., Cleveland, is wintering at this port. The lake fleet is pretty well scattered this winter. Buffalo will have a small winter fleet compared with last and previous years. Cleveland harbor will be pretty well crowded, and Lorain will have a large number of big carriers. Most of the vessels of the Bessemer fleet are being laid up at Lorain. The number of grain carriers at Chicago and Milwaukee is smaller than usual, while Duluth has the largest fleet of vessels in winter quarters on record. A large number of vessels that took coal cargoes to the head of the lakes were compelled to lay up there on account of the expiration of lake marine insurance policies.

The end of the season of navigation on the lakes for 1899 finds Buffalo's grain receipts for this year over 71,000,000 bushels less than those of 1898. Some authorities attribute the big decline to the dock troubles at the opening of the season, while others claim the railways are responsible for it. It is true the railways have carried much more grain this year, and they are preparing to do a still larger business next season. It is also true, perhaps, that the dock troubles turned some of the grain to rail routes, but many men maintained that the strikes were not chiefly responsible for the falling off, which is larger than was expected. The St. Lawrence route received none of this deficiency, so evidently railroads carried an extra bulk to the coast for direct shipment.

## CLEVELAND.

*Special Correspondence to the Marine Record:*

The steamer Eureka was placed in one of the upper dry-docks last Friday. Seven of her bottom plates are damaged.

The local life-saving station was closed last Saturday. Capt. Motley will remain in charge of the station during the winter.

The Bradley line steamers, M. B. Grover and City of Cleveland, are expected to arrive here this week to go into winter quarters.

It is learned that Mr. M. A. Bradley is to be named among the wealthy vessel owners who will take a trip across the Western Ocean this winter.

The Shipmasters' Association held the first meeting of the season. A committee was appointed to make arrangements for the annual reception and ball.

Half a dozen of the largest boats owned by the Wilson Transit Co., are wintering at Manitowoc and will hold grain for winter storage, on account of the Northern Grain Co.

Mr. L. M. Bowers, general manager of the Bessemer Steamship Co., has been laid up at his home, Binghamton, N. Y. He is improving in health and is expected back to business at an early date.

The Boutelle Towing Co. sent a couple of their large tugs to the coast, and their Boston manager, Mr. William Mack, stated that they were gaining increased patronage almost daily and that the fleet would soon be increased.

Mr. John C. Fitzpatrick visited here this week. His numerous friends and old business associates were pleased to see him looking so well and hearty. Mr. Fitzpatrick has been the Buffalo manager for the Clover Leaf Line for the past couple of seasons.

Capt. James Corrigan has added another vessel to his fleet. He has bought the schooner J. I. Case from Detroit parties. The price was not given out, but it is said to be \$13,000. This makes sixteen vessels that Capt. Corrigan has purchased this season.

Captain Charles Miner while at work on his vessel, the steamer H. J. Johnson, at Ashtabula, fell from the upper deck to the main deck, a distance of ten feet. His left collar bone was fractured and a rib in his left side broken. He also sustained a severe scalp wound.

Capt. John Mitchell will make a trip to the Mediterranean during the winter, leaving home about Jan. 25. Capt. J. S. Dunham, of Chicago, will make the same trip. There are other lake vesselowners who also contemplate a trip to Europe before the opening of navigation in 1900.

Navigation is not quite closed as ore, grain and coal have been moving this week, and there are still vessels on the freight market. The Lake Superior traffic is stopped and the "Soo" locks closed but Escanaba and Lake Michigan ports are still open. The John Craig cleared from Escanaba on Wednesday for an Ohio port and if the ore can be got other vessels will load at that port.

The annual reception and ball of the local lodge of the Shipmasters' Association will be held at the Chamber of Commerce Thursday evening, Jan. 25, the week following the annual meeting of the Lake Carriers' Association. The members of the committee of arrangements are: Capt. C. M. Ennes, John Smith, A. G. Greenley, Thomas Jones, W. A. Collier, Ralph Byrns, Samuel Allen and C. G. Ennes.

A meeting of the Masters' and Pilots' Association was to have been held last Monday, but the general officers were away. This necessitated and postponement of the meeting. Naturally, the following meeting would be next Monday evening, but as that is Christmas there will be, of necessity, another postponement. It is thought that a meeting will be held some day next week. The members will then map out the work that is to be done during the winter.

If ever owners searched for a missing boat and acted from a humanitarian standpoint, it is the firm known as the Minnesota Steamship Co., in sending the several expeditions after the whaleback barge No. 115, cast away last week on Lake Superior. Their first regret was that the crew of the barge might run short of provisions before being picked up. This week, two expeditions, comprising four vessels, started out from Duluth and Sault Ste. Marie in search of the missing craft, but a successful result of their cruise is now being generally doubted.

Life-saving crews on the lakes have had a more than usually easy time the past year, and the few wrecks that have occurred have been out in the lake beyond reach of the life savers. The Typo disaster, the Hunter Savidge and the Niagara losses were beyond all possible reach, and not a single big wreck has occurred along the shore line. The cause is to be found in the markedly fine weather extending throughout the season, the great increase of big boats and the falling away in number of the little craft, which were easy prey to the storms.

Capt. James Laframboise, of the steamer William Edwards, was painfully injured while on board his vessel a few days ago. The William Edwards is undergoing repairs at the Shipowners' drydock, and Capt. Laframboise in walking about the deck slipped upon an insecurely fastened hatch and was precipitated into the hold. He fell about twenty-five feet. The captain received painful wounds about the back and shoulders, and a bad scalp wound. He was conveyed to St. John's Hospital. Capt. Laframboise's home is in Amherstburg. He has four sons in this city.

Mr. Thos. W. Bristow, who has divided his time for the past score of years as superintendent of construction in the Wyandotte yards of the Detroit Dry Dock Co. and the Cleveland Ship Building Co., will take a similar position with the Maryland Steel Co., Sparrows Point, Md. Mr. Bristow has always been very well thought of among those with whom he was brought into contact and a small army of people will regret his departure from the lakes. In his relations to the large number of workmen continually under his charge, Mr. Bristow exercised great executive ability and very seldom had any labor troubles. At a recent vote taken on the West Side, to determine the most fair minded "boss," the majority were in favor of Mr. Bristow, and he was presented with a handsome gold watch, suitably inscribed. Other compliments, including a very fine diamond ring, etc., are also to his credit. In leaving for the scene of his future labors early in January, Mr. Bristow will carry with him the earnest and best wishes of a large community for his future success, and, should circumstances so transpire that he may again return to the lakes he will meet with as hearty and numerous a welcome as there are present regrets at his departure.

## DETROIT.

*Special Correspondence to The Marine Record.*

The steamer Forest City and consort William McGregor are expected here this week to go into winter quarters.

Tonnage is still being sought after for passenger service as well as cargo carrying, and even a fifty per cent. advance on former valuations does not seem to cinch intending purchasers if they can only secure the bottoms that they desire or require.

On Monday there was the first ice of the season in Detroit river. During Saturday night considerable thin ice formed in Lake St. Clair, and floating down, was blown against the Michigan bank of the river so as to cause considerable delay to the ferry boats.

The remains of the late John Franklin Eddy reached Bay City last Friday from St. Augustine, Fla., accompanied by Mrs. Eddy and her son, John W. They were met at the station by relatives and friends and taken to the family residence, 258 Washington avenue. The funeral took place on Saturday.

An effort is being made by Mr. George V. Wisner, of Detroit, acting as a member of the United States Board of Engineers of Deep Waterways to determine the approximate effect of shallow water on the speed of steamships. The board is collecting from vessel owners information from the logs of their vessels regarding time of passing lights on Lake Huron and Lake St. Clair, and will thus be able to form a fair comparison of the rate of speed on Lake Huron as compared with that on Lake St. Clair.

The twenty-third annual dinner to the employees of the Detroit & Cleveland Navigation Co., took place on Saturday evening on board the steamer City of Detroit. Invitations were sent to all officers and members of the company. The season 1899 has been the most prosperous year for the line. It has passed without loss of life or property. Mr. David Carter, general manager of the line, recalled the fact that since the last banquet the ranks of the company had not been broken, and that year after year the same faces had been seen around the same tables. He said that through the watchfulness of a kind Providence and the carefulness of the officers, the steamers of the company had covered 160,000 miles during the past season without a single accident, and maintaining, with few exceptions, the exact schedule time. He thanked the employees of the company for their co-operation during the years past. Capt. A. J. McKay, acted as master of ceremonies, and a number of toasts and musical numbers made the banquet merry. Other entertainment was furnished by amateur and professional performers. Each guest was presented with a souvenir silver oar with the compliments of Mr. Carter. After the spread the guests retired to the saloon above for a smoker and card party.

## FLOTSAM, JETSAM AND LAGAN.

The Sault canal closed for the season Sunday, Dec. 17. In 1898 the canal was closed for the season Dec. 14. Boats could undoubtedly have kept navigation open for a week or ten days from the date of closing the canal, but as no insurances could be effected, traffic ceased on Lake Superior.

The Indians had bound their captive to the stake, when the conventional happy thought struck the latter. "If you burn me," he explained, "the sun will be darkened tomorrow." "You will find," replied the Indian, "if you calculate the parallax in the forty-third decimal place, that the eclipse does not take place until the day after tomorrow." Saying which, for these simple children of the forest were all graduates of the government schools, they proceeded with their barbaric slaughter.—Detroit Journal.

Capt. Wm. Morrow, mate of the steam barge A. Weston, of Milwaukee, whose home is at No. 824 Franklin street, Detroit, on reaching Chicago recently, learned that his wife was on the steamer Niagara, lost on Lake Erie with all on board. Capt. Morrow went on to Detroit to apply for the administration of his wife's estate, as he kept his money in the bank in her name. On arriving there he found a telegram from Chicago, addressed to his wife, informing her that a son of hers, named Charles Johnson, had been accidentally killed. So that it was a double bereavement for the captain.



CHICAGO.

*Special Correspondence to The Marine Record.*

The steamer Pewaukee and J. L. Hurd will go to Sturgeon Bay this week, to lay up.

At the yards of the Chicago Ship Building Co. the steamer St. Paul was in dock and had 4 plates taken off re-rolled and re-placed, and new stern bearings; the steamer City of Louisville is in for new stern bearing and wheel.

The insurance adjusters who examined the damage caused by fire on the steamer Mary last week made a satisfactory settlement with the Graham & Morton line. The Mary was insured for \$17,000. The hull will be raised immediately and if not a total loss the vessel will be rebuilt.

At Miller Bros. shipyard the steamer Oregon is in dock receiving some new keel aft, and new stern post and stern; the tug John Torrent was in for bottom calking; the tug F. O. Earnshaw for a new wheel and new rudder; the barge Aloah for a new stem and bottom calking.

Capt. John Cowan, aged 65 years, died of paralysis Sunday evening 17th, after only 3 days illness, at St. Luke's hospital, where he was taken last Thursday, when he was stricken down by paralysis on Fifth avenue. The deceased was for several years master of the barge S. M. Stephenson, prior to which he was master of the barge Parana, and for many years master of the schooner Annie O. Hansen, and before that of the scow schooner Menominee. He was one of the old-timers on the lakes, and was much respected. He was a kind-hearted, upright, honest man. He was a member of the Masters' and Pilots' Association, The Cleveland No. 211 Masonic Lodge and No. 1 Garden City Foresters' Lodge. His funeral took place Wednesday afternoon under the auspices of the No. 211 Cleveland Masonic Lodge, at Rosehill Cemetery, and was attended by many of the deceased captain's old friends.

At J. B. Bates & Co's. shipyard the steamer John Rugee has received part new floors and some new stanchions and rail; the steamer New Orleans a new main mast, new floors and ceiling and calked all over; the steamer Frost and Averill are receiving a general rebuild and all over new upper works; the steamer C. F. Beilman received entire new floors and ceiling and re-calked topsides; the steamer Mecosta is receiving new deck beams and decks, new floors and general re-calking; the steamer Iosco new stanchions, rail and covering board around the stern and new floors; the steamers City of Venice, City of Paris, and Nyanza and barges Olive Jeanette and Biwabik are receiving new floors; the steamer W. P. Ketcham new upper deck beams and deck; the schooner Geo. W. Sturges is receiving new hatch coamings; the schooner Bliss part new stanchions, quick work and rail; the steamers Wm. B. Morley and John Oades received general repairs.

PORT HURON.

*Special Correspondence to The Marine Record.*

The Runnel's fleet are all in winter quarters at this port.

The steamer Sakie Shepherd will be lengthened 18 feet at Marine City this winter.

The local Shipmasters' Association opened the rooms of the society last Monday.

It is stated among vesselmen that there will be fewer boats laid up here than there has been for several seasons past.

The steamer Italia is in Dunford & Alverson's lower dry dock for a thorough overhauling, and all necessary repairs will be put on her.

Several steamers are waiting to dock at Dunford & Alverson's; the dry docks are doing now all that is possible, and they have a good slue of work ahead. It is noted that not a single Port Huron owned craft was lost this season, and it is further remarked that no one hailing from this port was lost.

The Kendall Marine Reporting Co. have agents at every port on the Canadian side, so they are in a position to learn the first reports of any casualties to vessels, such as grounding, stranding, wrecked, etc. This is claimed as being an advantage over their competitors in the marine reporting business.

The Mills Transportation Co., Port Huron, has entered suit against the Montreal Transportation Co., to recover \$5,000, representing the value of the barge Leader and her cargo of coal. The action arises out of the sinking of the barge Leader by the schooner Dunmore, in the St. Clair river last summer.

The captains and engineers who have laid up their boats are making arrangements to re-open their respective headquarters in this city. It is expected that all the sailors will return home during the next two weeks. During the season just ended not a Port Huron sailor has lost his life and no Port Huron boat has been lost.

An interesting suit was begun on Wednesday. W. D. Ragan's barge Jupiter brought a load of coal from Toledo for Charles H. Jarvis. Upon the arrival of the boat at this port Mr. Ragan would not unload the coal unless Jarvis paid him \$25 a day demurrage for the time the boat was delayed in Toledo. Jarvis tendered the amount of the freight money to Mr. Ragan and asked for the coal. The money was not accepted. Jarvis, through his attorneys, Law & Moore, has replevined the coal, and it is being unloaded at the dock in Black river. The question involved in the suit will be whether Jarvis had a right to the coal or not. Ragan will be represented by Wolcott & Moore.

DULUTH-SUPERIOR.

*Special Correspondence to The Marine Record.*

Captain Pryor expects to get orders to shut off the light at the ship canal about Dec. 20.

The Matoa and Kearsarge loaded at Duluth this week after they had each discharged a coal cargo at Two Harbors.

Captain Thomas Doody, keeper of 14 mile point light near Ontonagon, has arrived in Duluth to spend the holidays with his sister at 550 Lake avenue south. He will soon go east for the remainder of the winter, and will return to the light stations about April 1.

Marine Engineers' Beneficial Association, No. 78, of Duluth, elected the following officers for the coming year: President, M. Ryan; vice president, W. A. Redher; secretary, L. M. McNamara; treasurer, A. Harvey; delegate to national convention, James H. Bishop; trustees, A. Harvey, James H. Bishop and R. F. Barrows.

Following are the names of boats that will be in winter quarters at Duluth this year: Steamers E. M. Peck, J. B. Trevor, A. D. Thompson, J. B. Colby, Northern Light, North Wind, Zenith City, Empire City, Kearsarge, Matoa, and Republic. Barges Granda, Grampion, Lizzie A. Law, Marcia, 131, 127, 201, and 202, making twenty in all.

Following are the names of the large lake boats in winter quarters at Duluth this year: Steamers—E. M. Peck, J. B. Trevor, A. D. Thompson, J. B. Colby, Northern Light, North Wind, Zenith City, Empire City, Kearsarge, Matoa, and Republic. Barges—Granada, Grampian, Lizzie A. Law, Marcia, No. 131, No. 127, No. 201, and No. 202, making 20 in all.

The recent storm on Lake Superior inflicted damage to that portion of the Marquette breakwater which is not crowned with concrete superstructure. For a distance of 700 feet out from where the concrete work ends a large part of the docking was torn off by the waves, and in several places 12x12 timbers on the harbor side were torn out for a distance of about forty feet.

The Collector of Customs has imposed a fine on the steamer North Star for a violation of the sailing and steering rules. It will be remembered that the North Star attempted to pass the steamer Siemens in St. Mary's river, and instead ran into her stern, sending her aground. As a result of this the North Star also went aground on the opposite side of the channel, and thus blocked the passage.

The new dry dock, so far as excavation is concerned, keel blocks laid, etc., is about completed. The Superior Ship Building Co. will put in the machinery themselves and, as the gate is in place there only remains to dredge away the cofferdam and the dock will be ready for business. The general dimensions are, 606 feet in length, 60 feet wide at bottom and 107 feet at top, depth 24½ feet. These dimensions will accommodate any tonnage now afloat on the lakes or that is likely to be put afloat for the next decade or two at least.

WINTER FLEET AT BUFFALO.

Bulgaria, R. R. Rhodes, Samuel Marshall, Edward Smith, C. H. Bradley, D. C. Whitney, Byron Whitaker, Robert Mills, Wotan, Tom Adams, Huron, Livingstone, George F. Williams, Tampa, Fedora, Meriden, City of Berlin, William H. Gratwick No. 1, John B. Ketcham, Norseman, George Spencer, Shenandoah, Venezuela, Wyoming and Santa Marie, Australia, Celtic, S. J. Tilden, Kingfisher, M. Woolson, Brightie, Connelly Bros., Ogara, F. B. Gardner, J. S. Richards, Monitor, John Magee, D. P. Rhodes, Atmosphere and S. E. Marvin, Samuel F. B. Morse, William Siemens, John J. McWilliams, Lagonda, H. C. Frick, Crescent City, Queen City, S. S. Curry, City of Bangor, Sevona, Alva and L. C. Waldo.

Western Transit line—Steamers Buffalo, Troy, Hudson, Mohawk, Boston, Vanderbilt, Commodore, Montana, Auburn and Chicago.

Anchor line—Steamers China, India, Japan, Alaska, Conemaugh, Juniata, Susquehanna, Mahoning and Lycoming.

Erie Railroad line—Steamers H. J. Jewett, Tioga, Rochester, Chemung, Starrucca, and Oswego.

Union Transit Co.—Steamers William H. Stevens, Eber Ward, Avon, Portage, James Fiske, Jr. and the John M. Nicol.

Lehigh Valley line—Steamers Fred Mercur, E. P. Whilber, Seneca, Saranac, Harry E. Packer, Oceanic and Tacoma.

Northern Steamship Co.—Steamers North Star, Northern Wave, Northern King, Northern Queen, North West and North Land.

Lackawanna Transit Co.—Steamers Russia, Cuba, Lackawanna, Chili, America, Thomas Maytham and the William H. Gratwick, No. 2.

Soo line—Steamers Nebraska, John Pridgeon, Jr., Hennepin and Minneapolis.

Whalebacks—Steamers J. B. Colgate and Thomas Wilson; barges 134, 129, 118, 130, and 133.

Wilson line—Steamers H. Oliver, Andrew Carnegie and W. D. Rees.

MARINE PATENTS.

Patents issued Dec. 19, 1899. Reported specially for the MARINE RECORD. Complete copies of patents furnished at the rate of ten cents each.

639,334. Ship. Olof Akerberg, Burlington, Iowa, assignor of one-fourth to Nils Anderson, same place.

639,352. Wave-power motor. D. K. Bryson, Pittsburg, Pennsylvania.

639,470. Regulator for power or propeller shafts. Luigi Troubetzkoy, Milan, Italy.

TRADE NOTES.

The Bullock Electric Mfg. Co., Cincinnati, O., report fifty-five orders, for the month of October, for machines ranging in size from the smallest to 300 kw. A repeat order was received from the Maryland Steel Co., Sparrow's Point, Md. This makes the fifth order, and being for a 300 kw. generator and several motors.

The success of the Monarch engine stop and speed limit system, manufactured by the Monarch Mfg. Co., Waterbury, Conn., has been very marked, and its popularity is increasing very rapidly. The company have over fifty orders on their books for this system which have not yet been installed. They have issued a new and beautifully illustrated catalogue containing a complete description of their system, which they will be pleased to send upon application.

The New York Air Compressor Co. is a new organization which has been incorporated under the laws of the state of New Jersey, with a capital stock of \$100,000. The company have purchased a complete foundry and machine shop plant on the lines of the New York & Greenwood Lake R. R. at Arlington, N. J., and it is intended to manufacture a complete line of air compressing machinery at the new plant. The New York offices of the company are at 120 Liberty st.

In these days of labor-saving appliances, the question of industrial railways for manufacturing establishments is an important one. The C. W. Hunt Co., 45 Broadway, New York, have prepared a catalogue of haulage, and transportation and conveying facilities for power plants and industrial works of all kinds. Illustrations of curved sections of tracks, switches and a large variety of special cars, etc., together with the information contained, combine to make the catalogue an interesting one.

THE International Correspondence Schools have issued an Official Messenger, serving as a medium from the home office to the assistant superintendents, solicitors and collectors. The initial number contains a detailed description with numerous illustrations of the buildings, method of instruction, and business methods and relations. Succeeding numbers will appear as rapidly as possible. Address requests for copies to Geo. F. Lord, Editor Official Messenger, International Correspondence Schools, Scranton, Pa.

A large and most complete steel foundry and steel forging plant will be built early in the spring by the Westinghouse Machine Co., at East Pittsburg, at a cost of about \$1,250,000. The plant will have a capacity of about 80 tons of steel castings and forgings a day. The plans for the plant were prepared by Mr. E. E. Keller, vice-president and general manager of the company. The foundry will have a steel frame building 400 feet by 200 feet; two modern 40-ton open hearth steel furnaces will be erected. The forging shop will be 400 feet long and 150 feet wide, and will also be a steel frame building. About 350 men will be employed in the new shop. The new plant is largely built with a view to supplying the needs of the mammoth Corliss engine addition which this company have made to their business.

The Pratt Chuck Co., Frankfort, N. Y., are evidently sharing in the increased prosperity of the country, as, owing to the large demand for their product, they have not only found it necessary to largely increase their force, but are rebuilding and making additions to their plant in order to meet these demands. Among several foreign orders recently received was one particularly large from one of the great shipbuilding firms on the Clyde. Their export business bids fair to receive added impetus, as they are now in correspondence with one of the largest railroad systems of Great Britain, who desire to secure a chuck that will not permit the drill to slip under any conditions, that they may introduce the same in the several railroad shops connected therewith. They have already placed a trial order with this firm. In addition to these orders they are in receipt of numerous inquiries from all parts of Europe, and also report large increase in their domestic orders, showing that the machinists are recognizing the superiority of these chucks.

SOUTH MANITOU SIGNAL STATION.

Senator McMillan's bill providing a wind signal station on South Manitou Island and telegraphic communication with the shore has been referred to the subcommittee on commerce, of which Senator McMillan is chairman, and will be favorably reported to the full committee within a few days. The Senator feels confident that sufficient votes can be mustered to incorporate this measure, which calls for \$15,000, in the sundry civil appropriation bill at the present session.



### MORE CANALIZING.

The recent agitation over a proposition to open up communication with the vast expanse of grain fields of the Northwest by water, brings to mind the circumstances under which this project, carefully nurtured and timidly put forth, first saw the light. It was in boom days—days of vast and rash ventures and feverish speculation when impossibilities of the day became probable on the morrow and on the third day they were actualities.

In scope and general purpose the canal scheme of the early eighties is the project of today. It is purposed to make possible the transportation of the product of the Northwest prairie to consuming points along the stretch of the inland seas, and even out across the salt water to the crowded continents half way around the world by water.

The object is of course to effect a saving in transportation, to the end that a profitable market will be opened to the farmer of the Northwest, and the congested points of distribution now growing inadequate, will be relieved.

The agitation in the earlier days resulted in a convention being called. Men interested, or those who were likely to be interested in the ship canal met in Duluth. A committee of three was appointed with instructions to explore the country, report on the amount of water available for canal purposes, the length of the streams that were navigable and, in short, the feasibility of the scheme. Those appointed were George Stuntz, D. G. Cash and C. H. Graves.

After eight months of a most thorough and exhaustive examination of the country, the committee appeared before the convention assembled at Duluth and returned a flattering recommendation on the practicability of the plan.

In view of the recent agitation the views of Mr. Stuntz, who had charge of the technical work of the expedition, will be interesting. When interviewed by the Duluth New Tribune he said:

"A canal to Grand Forks is not only feasible, but I expect it will be an actuality. Friends of the project who saw it snowed under in 1882 predicted a resurrection with the growth of a demand for wheat by foreigners. And there is no reason why it should not be. My report to the canal convention provided for two routes. One by improving existing waterways would be of course the cheapest, although a very long and circuitous route. The other furnished estimates on a cut direct from the western extremity of Red Lake directly across the prairie. This would not be as arduous a task as at first appears. Steam shovels could be used over every inch of it and the soil taken from the cut would form part of the banks. This is the route I would recommend.

"Grand Forks is about 600 feet above the level of Lake Superior but locks would become imperative only this side of Red Lake. Advantage would be taken of Lake Winnebagoish and tributary waters which would make a stretch of straight steamboat navigation of 175 miles.

"Canaling on the Lake Superior end of the route would have to be begun at the mouth of the White Pine river, which is 250 feet higher than the level of Lake Superior, but in these days of gigantic locks operated by hydraulic power the obstacle is not serious. The number of locks would of course depend upon their depth, but I think the flow of water over the entire line could be regulated by 20 locks. These would be capable of lifting a vessel of 1,200 tons capacity over the hills and placing it on a body of deep water navigation 175 miles long and only 50 miles of canal would then be required to enable it to reach its loading dock.

"By improving Big Thief river from Crookston even this 50 could be obviated but as I have said the route would be circuitous—too long in fact to be practicable.

"As regards feasibility, there is no legitimate doubt but whether transportation thus afforded will be so much less than by rail as to make the project profitable is a question."

Aside from the agitation of real estate speculators whose profit in the event of an inland waterway would be first, there has been inquiry into the matter by men whose success in big enterprises can command a blind following of capital to build a canal, should they lend the force of their money and experience to the plan.

The benefit to the Northwest would be measured in the benefits resulting to the vast grain belt. Briefly the canal scheme is resolved not to the question of whether it is feasible but whether it is profitable.

THE Toledo & Ann Arbor car ferries have carried 6,000 carloads of freight from port to port this year, an increase of 1,500 cars over last year.

### TO TUNNEL STRAITS OF GIBRALTAR.

A gigantic undertaking for tunneling the Straits of Gibraltar is now receiving attention.

M. Jean Berlier, famous civil engineer, who is the author of the project, has just published in pamphlet form the result of his studies in connection with it.

He considers that an inter-continental tunnel, uniting Spain and Morocco, prolonged by the railway from Tangiers to Lalla Maghnia, would prove invaluable for the successful developments of France's African colonies.

From soundings taken by him, M. Berlier has proved the existence of compact rock formation across the straits, which guarantees solidity and impermeability. The undertaking, he says, would be no more difficult than the piercing of Mont Cenis, Saint Gothard, the Arlberg, or the Simplon. He adds if the diplomatic obstacles are not greater than the natural, success is certain.

He estimates that a tunnel of 41 kilometres (25 1/2 miles) would cost 123,000,000 f. \$24,600,000, and the work would require seven years. He calculates that the connection of the lines of the Algerian railway system and the extension from Tangiers to Lalla Maghnia would cost another 18,000,000 f, or 19,000,000 f., so that the whole enterprise would necessitate 142,000,000 f. (\$28,400,000).

To offset this expense, M. Berlier shows that the approximate yearly revenue would be 15,250,000 f. (\$3,050,000).

He has already received the consent of the Spanish Government to the scheme, and is working to obtain the authorization of the Moorish Government to create a tunnel terminus in its territory.

### VISIBLE SUPPLY OF GRAIN.

As compiled for THE MARINE RECORD, by George F. Stone, Secretary Chicago Board of Trade.

CITIES WHERE STORED.	WHEAT. Bushels.	CORN. Bushels.	OATS. Bushels.	RYE. Bushels.	BARLEY. Bushels.
Buffalo .....	3,153,000	623,000	691,000	274,000	1,696,000
Chicago .....	16,233,000	2,416,000	1,314,000	292,000	68,000
Detroit .....	729,000	189,000	220,000	13,000	118,000
Duluth .....	6,214,000	78,000	182,000	249,000	99,000
Fort William, Ont. ....	2,211,000				
Milwaukee .....	195,000		2,000	21,000	
Port Arthur, Ont. ....	172,000				
Toledo .....	1,495,000	850,000	440,000	6,000	
Toronto .....	51,000		4,000		67,000
On Canal .....					
On Lakes .....					
Grand Total .....	57,153,000	11,585,000	5,382,000	1,422,000	2,891,000
Corresponding Date, 1898 .....	30,559,000	18,153,000	6,009,000	1,126,000	4,169,000
Increase .....	861,000	339,000		78,000	
Decrease .....			695,000		202,000

While the stock of grain at lake ports only is here given, the total shows the figures for the entire country except the Pacific Slope.

### FOUNDERED ON LAKE SUPERIOR.

Whaleback barge 115, which parted her tow line and broke away from the steamer Colgate Hoyt, in the gale on Lake Superior, Wednesday morning, December 13, has been given up for lost, with nine men, three of whom are Capt. Arthur A. Boyce, Mate Michael Stynop and Cook Wm. Buckner. The search was given up yesterday, when the Hoyt passed through the "Soo" locks bound down to Lake Erie, and the tug Vigilant tied up at the "Soo."

This whaleback was built at West Superior in 1891, and was 256 feet long and 36 feet beam. She had 3,000 tons of ore and was worth \$50,000.

The captain of the Hoyt says that a furious, cold northeaster was encountered in Lake Superior, and for 40 hours the Hoyt and tow make slow headway. When near the lower end of the lake, the course was shifted to the south, and the shore line was skirted for shelter. On Tuesday it was noticed that the crew of the 115 were at the pumps, and the water thrown out was colored with iron ore. She gave no distress signal.

At 6 o'clock Wednesday morning the tow's lights were burning. Five minutes later it was reported that the tow was adrift, and the Hoyt put about and searched four hours. Scarcity of coal forbade longer delay. The lifeboats and rafts of the barge were either washed away or frozen fast to the deck and were useless.

Two additional members of the crew are known to have been T. S. Graham and Albert Wheeler, of Chatham. Oscar Buckner, the cook, is from Sandwich, Ont., and Capt. Boyce hails from Henderson, Jefferson county, N. Y.

A second tow was in the same storm and the barge also broke adrift, but was afterwards picked up and reached port safely.

### THAT DAM AT NIAGARA QUESTION.

A special from North Tonawanda, N. Y., to the Buffalo Courier, is couched in the following terms:

"The bill which has been introduced in the lower House of Congress by Representative Corliss, of Michigan, providing for a dam at the head of Niagara River for the purpose of raising the lake levels in Lake Erie, Lake St. Clair and the Detroit and St. Clair rivers, is occupying the attention of the commercial men of this city at the present time. Scathing denunciations of the bill are to be heard on all sides. Among the lumbermen, in particular, there is great activity.

"Many of the leading lumber dealers here have not come out openly against the bill, relying upon the local representatives in Congress to act judiciously in the matter, by not allowing any legislation that will ruin this port. These men believe the bill will not be passed.

"The officers of the Swan-Donough Lumber Co., one of the foremost lumber firms in the Twin Cities, believe the dam will never be constructed. They think the Canadian Government will not under any circumstances, consider the scheme. The members of this firm are Canadians, and they believe they know the feeling of the Canadian authorities.

"They claim that by the raising of the lake level three feet the overflow of the lake in the counties of Essex and Kent would be enormous, and the damage resulting to these counties from such an overflow would reach into thousands of dollars. Mr. Swan says the Canadian Government has spent enormous sums of money in the drainage of the counties, and that they will not tolerate any scheme whereby the same conditions will again exist. The firm says the dam will never be built.

"The Board of Trade of Buffalo was aroused to action in the matter, and a hurried call was issued by the secretary of that body for a special meeting. The meeting was held, and it was decided not to take any action against the bill, as a thorough investigation had been made by members, in company with leading Canadians and other men, and it had been found that the bill was nothing more than a dream, and would never become a law. It was then decided to drop the matter entirely.

### A WRECKING AND SALVAGE FIRM.

Regarding the present wrecking qualities of the several firms engaged in that class of work on the lakes their resources are generally considered equal to all ordinary requirements. It now appears that a wrecking association is to be launched in time for the opening of navigation in 1900. It will excel any on the lakes. Charles D. Thompson, who is interested in the matter, says:

"You can say for me that the trouble we experienced in raising the Harlem demonstrated to us that there was not a complete wrecking outfit on the lakes, and we are going to have one. You can depend that the wrecking outfit we will put on the lakes next year will have everything from the smallest detail of the business to the most important feature.

"Now, about the Harlem. There has been a good deal said about the boat, and some had it figured out how much we might lose or how much we might gain, and, in fact, know more than we did. For the benefit of those people let me say that Boynton and Thompson never owned the Harlem. I will not say any more about that for the present. That will keep some of them quiet; and she has never been for sale, and we have never made figures on her except when requested.

"A transportation company is after the boat, but they evidently think we want to give it away. I cannot give you particulars of the wrecking outfit, but will say that it will be the best on the Great Lakes, and that Boynton and Thompson, Port Huron, are back of it."

A. J. MOXHAM, the new manager of the Dominion Steel and Iron Company, late of the Lorain Steel Company, says of the conditions and prospects at Cape Breton: "My impression is that it would be difficult to find a place on the continent, or anywhere, with all the conditions so favorable for the establishment of such an industry as Sydney. I went to Sydney for the express purpose of going thoroughly over the ground where the big works are to be established, and did so with experts who came from New York, and was fully convinced of this. I do not often grow enthusiastic, but cannot help it when I talk of the possibilities for the future of the steel works at Sydney. I fear the competition will affect us to a considerable extent. You have many advantages in Nova Scotia for industries of this kind, some of which we over the line do not possess."



## REPORT OF THE WATERWAYS COMMISSION.

The preliminary report of the Deep Waterways Commission, recommending an international dam at the foot of Lake Erie for the regulation of water levels in Lakes Erie, St. Clair and Huron and connecting rivers, forwarded to Washington Dec. 7, consists of 40 pages of typewritten matter containing data and reports of engineering investigations.

In a letter addressed to Secretary Root, of the War Department, the Commissioners cover the subject in a bright way, as follows :

"Under the influence of varying relative supply, evaporation and discharge, the monthly mean level of Lake Erie has had an extreme variation of 4.6 feet during the past 70 years. The low level generally occurs at a time of year when navigation is most active. If the level of the lake could be constantly maintained at or near high stage, navigation would be greatly benefited by securing a maximum depth at the time when it is most needed, and by the practical deepening of the lake harbors.

"To maintain the level of a lake at or near some fixed stage, the discharge must be controlled so that it will always be approximately equal to the difference between the supply of water to the lake and the evaporation from its surface. In the case of Lake Erie this can only be accomplished by establishing regulating works in or near the discharging waterway. These works must be so arranged that they will not only maintain the level of the lake at or near the fixed stage adopted, but also so that they will produce no injurious effects upon the lakes and waterways from which a part of the supply is derived, or upon those which receive the discharge.

"This is the problem which the Board has investigated. For the details of its investigation, the methods employed, the data and reasoning upon which they are based, and the results obtained, the Board refers to the paper on lake regulations by Mr. George Y. Wisner, member of the board, which is appended to this report. This paper was prepared by Mr. Wisner in consultation with the other members of the Board, and it fully expresses their views. In this report, therefore, it is only necessary to give a brief statement of the conclusions at which the Board has arrived.

"The board is of the opinion that the best location for works for regulating the levels of Lake Erie is at the foot of the lake just below Buffalo harbor. The location in the Niagara river below Tonawanda has been advocated, but the board find upon investigation that regulation by works at this point would be less effective and much more expensive than at the adopted location.

"The works projected by the board are designed to distribute the discharge of the lake so as to reduce its variation of level to a small amount. This result cannot be attained by the use of submerged fixed weirs only, and a series of sluices is added to secure, in combination with fixed weirs, the control desired. The weirs will be constructed of concrete blocks, and will have an aggregate length of 2,900 feet. The sluices, 13 in number, of the Stoney type, will each have an opening of 80 feet, making an aggregate of 1,040 feet. The piers separating the sluice openings will be of substantial first-class masonry. These sluices can be operated under rules easily formulated and, in the opinion of the board, amply provide for condition more unfavorable than any recorded.

A canal with a lock is provided on the American side around the end of the dam and the rapids at the head of the river, affording a much safer navigable channel than the present one through the rapids. The estimated cost is :

"For regulating works, \$796,923.

"For lock and canal, \$2,325,967. This would be quite necessary to accommodate traffic below Buffalo along the Niagara river.

"The extreme high water stage of Lake Erie is about 575 feet above tide water. The level adopted by the board for regulation is 574.5 feet, or about 0.5 foot below the level of extreme high water. This is the lowest elevation at which regulation can be effected without enlarging the cross-section of the river at the gorge. Should it, for any reason, be considered desirable to regulate the lake at a lower level, the desired result can be accomplished by enlarging the cross-section of the river so as to provide for the maximum discharge at the adopted level.

"The board is of the opinion that, with the works proposed, the level of the lake can be maintained during the season of navigation within about 0.6 foot below the level adopted for regulation, under all conditions of supply heretofore recorded. Considerable changes of level due to violent winds would be temporary and infrequent, and, in the opinion of the board, would not seriously interfere with the regulation of the lake level.

"The current velocities in the Niagara river, below the point where the canal enters it, will not be increased by the operation of the regulating works.

"The modification of the outflow of Lake Erie proposed for the regulation of its level will not materially change the total volume of annual discharge, and will amount to only about one-fifth of the variation of the discharge for different years under present conditions. The effect of this modification upon Lake Ontario will be to slightly increase the rate of rise in the spring and make the date of maximum stage a little earlier. This will not injure the navigation interests of the lake.

"The board regrets that it has been unable to obtain reliable data connecting the discharge of the St. Lawrence river with the varying levels of Lake Ontario. The modification of the flow of the Niagara river which will be produced by

the proposed regulating works is so small when compared with other causes of change of level that the board is of the opinion that it cannot affect the depth of the waterways receiving the discharge to any material extent.

"The effect of the regulation of the level of Lake Erie, herein proposed, would be to diminish the slopes of the Detroit and St. Clair rivers for any given volume of discharge and to redistribute the flow. In the opinion of the board, the result of these changes would be to raise the low water stage about 3 feet in Lake Erie, 2 feet in Lake St. Clair and one foot in Lake Huron. This would obviously be of great benefit to navigation.

"If the channel from Lake Huron to Lake Erie should be made 30 feet deep, the low water plane would be slightly lower, the difference in level probably not exceeding 0.3 foot.

"The board is of the opinion that works can be established for regulating the level of Lake Erie which will be of great values to navigation not only in Lake Erie, but also in the upper lakes and connecting waterways, and will be of no injury to the lower waterways of the lake system, and that such works can be constructed at a cost which will be small compared with their benefit to commerce.

"In arriving at these conclusions the board has utilized all the information it has been able to obtain within the period covering its investigations. Additional observations are needed for more precise determinations of the probable effects of regulation upon the levels of the St. Clair, Detroit and St. Lawrence rivers, and the probable conditions of flow from the upper lakes. The board is, however, of the opinion that the uncertainties arising from this lack of complete data are fully covered by the ample provision made for varying the discharge at the regulating works. The results of observations in the St. Clair and Detroit rivers now in progress under the engineer department, United States Army, will probably be available before the board submits its final report, and any new information that may be thus obtained will be introduced therein.

"Attention is invited to the fact that the project is of an international character and can only be carried out after agreement between the United States and Canadian governments."

The more lengthy document, over the signature of Mr. Wisner, explains that the watershed of the Great Lakes system is 2.4 times the area of the lake surfaces, and that the problem of controlling the level of the lakes must allow for this rainfall as a possible increase of water in certain seasons, and for the evaporation from the surface in the summer months. This fact makes it an impossible proposition to attempt to maintain any absolutely fixed level of water, especially for Lakes Huron and Michigan. The large water area on the upper lakes serves as a supply reservoir for rainfall in years of excessive precipitation, discharging gradually into the lower lakes in years of less rainfall. A variation of level of one foot in Lakes Superior, Michigan and Huron is equivalent to a change in actual supply to the lower lakes and rivers of 68,300 cubic feet per second for an entire year. The average yearly rainfall on lake basins tributary to Lake Erie is 31.64 inches, equivalent to 618,000 cubic feet per second for the year. Of this, 340,000 cubic feet fall or flow into the lakes. Approximately 278,000 cubic feet per second is absorbed by the land on which it falls or is evaporated by local streams or marshes. Of the supply to the lakes, 120,000 cubic feet per second is evaporated and 220,000 feet flows through the Niagara river. The evaporation of Lake Erie is 30 to 36 inches annually.

The average annual fluctuation of Lake Erie is greater than that of Lake Huron, and consequently the slope of the connecting waterway is greater for the low water stages of the lakes than at high stages, a condition causing a greater low water discharge and a smaller high water discharge through the St. Clair and Detroit rivers than would be the case with the surface of Lake Erie regulated at some fixed elevation.

The deepening of the channels at the St. Clair Flats and Lime Kilns Crossing caused a decrease in the slope between Lake Huron and Lake Erie of from 9.2 feet in 1886 to 8.3 in 1890.

Experiments made by the commission showed that by raising the level of Lake Erie three feet, Lake St. Clair would be raised two feet and Lake Huron one foot, making the levels approximately what they were before being lowered by the deepening of the river channels. This would be brought about by decreasing the flow in the Detroit and St. Clair rivers caused by the higher waters in the main bodies below them.

The area of Lake Erie is so small compared with that of other lakes, that its reservoir capacity is only one-ninth that of the upper lakes, hence that body is more subject to extreme fluctuations than are the others. The regulating works would give to Lake Erie a controlling reservoir capacity which would secure permanently the necessary regulation of the levels. Careful surveys and examinations have been made to determine the topography, hydrography and character of material on which the regulating works would have to be founded and a series of observations have been made to determine the character of the proposed works.

Two plans have been generally advocated: The first to construct a dam with regulating sluices across Niagara river below Tonawanda river; the second, to construct a submerged weir in connection with a set of regulating sluices at the foot of the lake just below Buffalo harbor. The first plan would require an expensive dam with locks and weirs on each side of Grand Island, the excavation of 5,000,000 cubic yards of material at the head of the river, the purchase of \$3,000,000 worth of property which would be ruined by high water and the construction and maintenance of many miles of dykes. The total cost would be over \$12,000,000.

The regulating works at the foot of the lake would demand a combination of fixed weirs and regulating sluices, the estimated cost to be \$2,325,967.

The proposition of the commission is to increase the level to 574.5 feet above tide water, which is nearly extreme high water level, although the plan includes a change of the plant so that maximum level would remain about one foot less in case there should be any objection to a permanent high water mark. This change would cost about \$384,000 additional.

Under the present conditions there is about 35 feet of water at the head of Lake Erie, between the river and the islands. Westerly winds force the water through the passages, lowering the water at the head and deepening it at Buffalo. The continuance of a westerly storm, at a time when water in the lake is low, piles up six to seven feet of water at Buffalo. The deeper the water at the head the less marked is the wind effect, there being an under current of return water corresponding in volume to the depth of the body. Thus an added three feet would practically overcome the seriousness of wind effects.

Engineers' reports show that every foot of permanent improvements obtained in Lake Erie ports cost \$1,000,000 per foot depth of water gained and the result of the regulating works would be a saving of many millions of dollars in dredging, etc.

Mr. Wisner also discusses a 600-foot channel for the Detroit and St. Clair rivers and Lake St. Clair, with permanent 21-foot depth, and gives estimates of the labor required to do this. He shows that the establishment of the regulating works will save the excavation of 4,891,000 cubic yards of sand, clay and gravel, 201,000 cubic yards of sand, clay and boulders, and 248,000 cubic yards of rock. This would mean a saving of \$1,383,850 and would practically prove economical as between providing the 21-foot channel under present conditions or building the regulating works. Such an arrangement would allow lake carriers to load to full carrying capacity at all times with safety. This channel, Mr. Wisner insists, is an absolute necessity to accommodate the big vessels now in service.

"Congressman John B. Corliss called on the Secretary of War Tuesday morning and urged speed in the sending to Congress of the report of the engineers of the deep waterways and the raising of the lake levels by a dam in or near the Niagara river. The Secretary at once sent the report, and Mr. Corliss obtained an order from Speaker Henderson for an immediate print of the work for the information of the house.

The report is very voluminous. It is the basis of the Corliss bill, and is full of maps and drawings. The report, as soon as printed, will go to the committee on rivers and harbors, and Mr. Corliss expects to get an early committee report on his bill. There is a great deal of interest in the matter, especially among the members from states bordering on the Great Lakes.

## EASTERN FREIGHTS.

Messrs. Funch, Edye & Co., New York, report the eastern freight market as follows:

"Freights by steam, although hardly yet quotable at higher rates, have apparently reached bottom for the time being, and in view of the reduction in available and prompt tonnage, a moderate advance in rates generally may be looked for in the near future, notwithstanding the dullness customary during the approaching holiday season. The scarcity of grain at our seaboard, owing to the car famine, is slowly being overcome, and since Liverpool is likely to be a large purchaser of cotton in January, all prospects point to some compensation in freight rates and activity of movement after the turn of the year, for one of the most disappointing periods ever experienced in the development of autumn business from this coast.

Sail tonnage has been a trifle more active during the past week, a few charters having been effected for case oil to the far East, and but for the scarcity of vessels offering, the list would doubtless have been larger, as the inquiry in this line remains fair at present rates. In other directions there is nothing of importance to mention, unless it be a slightly better demand for lumber vessels in River Plate, both from the Gulf and from Eastern ports at full rates recently established, and it seems likely that we shall see a slight improvement ere long.

THE statement published recently that the scarcity of steel structural material is so severely felt by firms having contracts with the Navy Department that they have asked for extensions of time, is denied by firms interested. The publication stated that the Bethlehem Steel Company had addressed letters to a number of shipyards, asserting its inability to supply the steel demanded, and declaring that pig iron is not being produced in quantities supplied heretofore, owing to the lack of men to dig the ore. Vice-President Edward M. McIlvain, of the Bethlehem Company, says of the matter: "The story is absurd. We have written no such letters regarding inability to get ore, and we have not asked Washington for any extension of time on our contracts. I have just returned from Washington with the award of a contract for 25 sets of 3-inch gun forgings, which we have guaranteed to deliver in eight days and the remainder in fifty. That does not look very much as though we could not obtain sufficient ore to finish our contracts."

THERE is considerable activity at Roach's and also at the various other ship yards on the Delaware, including that of the Harlan & Hollingsworth Co., Wilmington, Del., where an unusually large number of vessels are either being newly built or extensively repaired.





ESTABLISHED 1878.

Published Every Thursday by

THE MARINE RECORD PUBLISHING CO.,  
Incorporated.

C. E. RUSKIN,	Manager.
CAPT. JOHN SWAINSON,	Editor.
CLEVELAND,	CHICAGO,
Western Reserve Building.	Royal Insurance Building.

## SUBSCRIPTION.

One Copy, one year, postage paid,	\$2.00
One Copy, one year, to foreign countries,	\$3.00
Invariably in advance.	

## ADVERTISING.

Rates given on application.

All communications should be addressed to the Cleveland office.  
THE MARINE RECORD PUBLISHING CO.,  
Western Reserve Building, Cleveland, O.

Entered at Cleveland Postoffice as second-class mail matter.

CLEVELAND, O., DECEMBER 21, 1899.

QUERY! What connection has the proposed three million dollar dam at Niagara with the thirty-three million dollar drainage canal at Chicago?

GEORGIAN BAY to Lake Ontario, or Lake St. Clair to Lake Erie, offers the Dominion government an excellent chance to keep up its canal expenditures now that the St. Lawrence system has been completed to the fourteen feet draft. The Welland canal will always receive a certain amount of traffic, but the route from Georgian Bay to Lake Ontario, if practicable from an engineering standpoint, would soon prove itself to be a more valuable route than the Welland has been for some years past.

WE have received from the Weather Bureau, Department of Agriculture, a copy of the first ice bulletin issued for the season. This chart is issued weekly on Tuesdays during the winter season, based upon data from regular Weather Bureau stations, supplemented by reports from selected voluntary observers. At the corresponding date of 1898 there was much ice reported from stations on the Great Lakes now reporting none, and the Missouri and Mississippi rivers were frozen much farther south than at this date, with ice generally varying from 6 to 18 inches.

THE recent collision between the North Star and the Siemens in the "Soo" river, among other things, points out the necessity for pilots to have a thorough and clear comprehension of what is permitted by the revised "steering and sailing rules." It is within the province of the local inspectors of steamboats to see that candidates applying for an original or first license should be perfect in the study of the "rules of the road." It is too early yet to say who was to blame for the late "Soo" river casualty, but that a fault existed somewhere is beyond argument.

THE Deep Waterways Board of Engineers are taking steps to determine the effect of shoal water on the speed of steam craft. This seems a peculiarly foreign subject for a committee composed of civil and military engineers to take up and ultimately elucidate, it is safe to say though that there will be less, rather than more, of the elucidation part of it. We venture to say, that when the Deep Waterways Commission begin to have even a superficial or hazy notion of the job they have tackled they will drop the inquiry as they would a hot brick. The subject does not come within the province of this committee, if it did, they are incapable of deciding it. The rule of thumb regarding the depth of water required, is, that it should equal the vessels length, then comes in the form of hull and propulsion, nature of the bottom sailed over and the rate of speed maintained, not to speak of the specific gravity of the water and a score of other considerations.

## TO PREVENT LOWERING OF LAKE LEVELS.

There seems to be a misconception regarding the result which is expected to accrue from placing remedial works to limit the outflow of water at Niagara. The general expression, and in fact the phrase used by the Waterways Commission as well as others, is "to raise the levels," when what is really meant is to maintain the levels, or prevent periodical lowering.

The method of deeping shoal water is by scouring off the bottom, such as the process used at the South Pass, at the mouth of the Mississippi, or by dredging, after the manner in which Montreal has been made a sea-port, and more markedly so in the transformation of Glasgow on the River Clyde.

We have printed the opinions of several authorities and interested parties in this issue of the RECORD, all of whom seem to dread the backing up of the surface levels so as to inundate reclaimed low-lying land, such, however, is not the purpose or intention for the establishment of remedial works at Niagara.

The object is to regulate and maintain the best surface levels so as to permit of no four or six feet ebb, whenever strong westerly weather prevails for any length of time.

The only danger, or rather feature, which we can see, in placing this, the first artificial obstruction to the natural flow of water on the lakes, is, in establishing a precedent for future similar obstructions, with the ultimate probability of there being a dozen of them built at different points and from time to time.

We may instance the water falling three feet at the Lime Kiln Crossing and towering high at the eastern end of Lake Erie. A sufficient head of water could not be put on so as to back the water, and send it several miles up the Detroit river against strong and continued westerly winds, therefore, it might be argued, that in the near future remedial works so as to regulate depths from Detroit to Bar Point would be necessary, as once out on the lake an increasing depth would be met with until the superabundance was found at the Eastern ports on Lake Erie.

However, lake commerce may not be held back by indulging in views of what may take place in this respect in the future. If the dam at Niagara will assist, as it certainly will, in maintaining an ordinary level under moderate weather conditions, then the project should be put in force and its experimental features be permitted to demonstrate the practical and actual value of such artificial obstruction, at the same time it is somewhat too late in the day to ask the enormous vessels now engaged in lake traffic to go over bridges and under arches in their path through the lakes.

## THE SHIP CANAL.

Engineer George W. Rafter, in charge of the survey for the proposed ship canal from the Great Lakes to the Atlantic ocean has completed his preliminary work and drawn his report. The project is to cut a canal thirty feet deep and 340 feet wide, which is three and one third times the depth, and five times the width of the Erie canal from Lake Erie to Lake Ontario around Niagara Falls, leaving Lake Ontario at Oswego, through the Oswego river to Oneida Lake, thence through the Mohawk Valley to the Hudson river. A single lock will be a thousand feet long, with walls over fifty feet high. The greatest problem has been to find storage for water to feed this great canal on its various levels, and yet not affect the water supply of manufacturing concerns now using various rivers. Mr. Rafter plans a great dam at Carthage, on the Black river, in Jefferson county, making a lake covering eighty square miles of land to feed the canal.

From this reservoir Mr. Rafter has located a canal ninety miles long, as wide as the Erie, to the proposed ship canal just west of Rome, and on the way down has planned a secondary reservoir in the Salmon river. The commission's work also includes a similar survey for a canal of the same character leaving the St. Lawrence river at the head of the Coteau Rapids and thence into and through Lake Champlain.

## THAT ST. LAWRENCE ROUTE.

The Montreal special, dated Wednesday, states that at a meeting of the Harbor Commissioners a settlement was reached between the syndicate headed by W. J. Connors and the commissioners for the erection of grain elevators at Montreal. Mr. Connors accepted the original agreement with a few minor changes. The syndicate has already given out the contracts in connection with the work, and the construction will be commenced at an early date.

## AN ARMOR PLATE PLANT.

It will be recalled that last winter Congress refused to contract for armor plate for the new war vessels at a figure the mills would accept. Prices have risen since then, and at the rates prevailing to-day it would cost a million dollars more to obtain the required quantity than at that time.

This has led to a renewal of the proposition that the government shall erect a great armor-plate mill of its own and abandon the contract system. The argument is a strong one, that the United States should put itself in a position independent of individuals in the manufacture of all materials for the national defense, whether armor, ammunition or guns.

The government has turned the old navy yard at Washington into a manufactory of large naval guns, and the work done at Manila and Santiago shows the superb qualities of these arms. Rapid-fire guns for secondary batteries are still, however, purchased from manufacturers. The success of the government gun plant is a powerful argument for the extension of the practice to armor—more especially as all work on armored vessels is at a standstill, because of the disagreement as to price last winter.

It is stated that an effort will be made in Congress to put the project through. It will, however, require about two years for the erection of such a plant, so that, even were the idea adopted, our new navy would have to wait, or enough armor be contracted for to supply the needs of the next twenty-four months.

## A DECISION ON PILOTAGE.

The Commissioner of Navigation recently decided that the statutes of the United States do not require fines to be levied upon owners or masters of vessels because of the fact that Canadian, rather than American pilots have been employed as steersmen. Section 4438 provides that American pilots shall be on board, and recently the owners of the steamer C. A. Street, of Port Huron, were fined \$100 for permitting that vessel to be steered by a Canadian pilot. Subsequently Commissioner Chamberlain and Assistant Secretary Spaulding took the matter up, and, after a careful examination of the law, it was decided that where an American pilot was on board there was no impropriety in turning the wheel over to a Canadian pilot, who, presumably, was better acquainted with the channel than his fellow-steersman. Gen. Spaulding, therefore, addressed the following letter to Collector of Customs Avery at Port Huron:

"This department is in receipt of your letter transmitting an application by Capt. A. P. Tallino for relief in the matter of a penalty of \$100 reported to have been incurred through a violation of section 4438, R. S., in the case of the steamer C. A. Street.

"The department understands that the taking on board of a Canadian pilot in addition to its full complement of officers required by law, did not constitute an offense under the section cited.

"Instructions with a view to the repayment of the money exacted in the case by the Collector of Customs at Ogdensburg, have been given to that officer. It is suggested that the applicant communicate with him for further information regarding the matter."

## RIPARIAN RIGHTS.

A marine man who has kept pretty close watch on the matter of riparian rights for the past 35 years, has arrived at the pertinent conclusion that a deed conveying land bordering on a stream gave a riparian right to the center of the stream, as was shown some years ago when certain Toledo men dredged sand in the middle of the stream near Marengo Island. They were called on by the owner of the abutting property, and the sand men refused to pay. The matter was taken into court, and the men who were taking the sand were compelled to pay. The opinion was expressed that a deed conveyed with it, whether mentioned in the conveyance, all riparian right. If it does not, the man who sold the property had no claim on riparian rights, and therefore the land was the property of the United States government and subject to pre-emption.

The Union Boiler Tube Cleaner Co., 255 Penn avenue, Pittsburg, Pa., has just completed a contract for cleaning two Hazelton or Porcupine boilers having over two thousand tubes, one end of which is welded tight. These tubes were badly scaled, and the closed end required a special tool of unique design as well as the use of their own design of flexible shaft.



**DETROIT RIVER TONNAGE.**

The Treasury Department has taken up for consideration the question of devising a method of obtaining at regular periods a reliable estimate of the tonnage that passes through the Detroit river. These figures are of great importance in the commercial statistics of the country, and also form the basis of representations to Congress as to the necessity for desired river and harbor improvements. The forthcoming report to Congress of the Chief of Engineers of the War Department will include an interesting statement on this point by Assistant Engineer Muhle, of Detroit, who says in part:

"I have made some efforts to obtain statistics from Canadian ports on Lakes Erie and Ontario. On the suggestion of the collectors at Port Colborne and Windsor, I applied to the Minister of Marine and Fisheries, Ottawa, Canada, and received a reply from Hon. John McDougald, Canadian Commissioner of Customs, stating that the records of that department contain only the arrival and departure of vessels, irrespective of the ports whence arrived or to which departed, and he is therefore unable to furnish the desired information. Hence Canadian vessels trading between Canadian ports on Lakes Erie and Ontario, and the Upper Lakes, through Detroit river, are not included in the summary submitted, and it is much to be regretted that not even an approximate estimate of the Canadian commerce through Detroit river could be obtained for this report.

"The following is a summary of the number of American vessels and their tonnage passing Limekiln Crossing, Detroit river, Michigan, during the season of 1898, the freight tonnage being estimated by adding 8 per cent. to the registered tonnage:

**DOWN STREAM.**

	Number.	Freight Tonnage
Detroit to mouth of river.....	532	118,145
To Lake Erie ports.....	12,216	15,061,900
To Lake Ontario ports.....	223	257,567
Total.....	12,971	15,437,612

**UP STREAM.**

From Lake Ontario ports.....	271	307,488
From Lake Erie ports.....	13,278	15,904,595
From mouth of river to Detroit.....	532	118,145
Total.....	14,081	16,330,218
Grand Total.....	27,052	31,767,830

"Although it cannot be contended that the above figures are absolutely correct, they submitted as the best result which could be expected under the circumstances above stated, and more nearly approaching accurate statistics than any which have ever heretofore been collected or published in relation to the commerce of Detroit river.

"If it should be deemed desirable to continue and improve the scheme herewith inaugurated in order to obtain the commercial statistics of the Detroit river during the present season of navigation it is necessary to commence at an early day with the Collectors of Customs at ports on Lake Erie and Ontario, especially those who had not sufficient facilities or inclination to separate their records in a manner to afford at the close of last season such detailed information as may be required.

"In view of the fact that this method of collecting statistics of Detroit river involves correspondence with only about eighteen Collectors of Customs on Lake Erie and four on Lake Ontario, it may also be possible in the future to obtain in like manner, a list and quantities of principal commodities carried to and from these ports through the Detroit river, to the end that the freight tonnage passing that great waterway may be determined with a greater degree of accuracy than by the addition of 8 per cent. to the registered tonnage, as in the above summary. The favorable replies received from Buffalo, Oswego, Lorain and other ports are so encouraging as to warrant some efforts being made to induce all the other collectors of customs to also take a lively interest in the matter and to regulate and separate their records with the view to furnishing commercial statistics in greater detail hereafter."

**ARTHUR ORR REACHED PORT.**

The officials of the Canada Atlantic Railway Co., at Ottawa were pleased to learn of the safety of the Arthur Orr, the big freighter owned by the company, and reported a day or two ago as wrecked on Cove Island. A telegram from Lion's Head, North Bruce, received Sunday night, explained the situation of the vessel. The Orr, it appears, was caught

in the fearful storm of the early part of last week, and was greatly buffeted. A part of the after cabin was smashed by the heavy seas, and the vessel lost her propeller blades. This occurred near Cove Island. As well as could be done in her crippled condition the big freighter was headed for a cove between the island and the mainland. At the opportune moment the anchors were let go, and the Orr rode safely at her anchors. Tugs were sent from Parry Sound and Midland, and they towed the Orr to Depot Harbor. The captain had a most hazardous journey to reach the telegraph station, having to traverse the Georgian bay for several miles in an open boat before reaching Cape Hurd, and then tramped through the woods to Lion's Head.

**ILLINOIS CANAL COMMISSION.**

Clarence E. Snively, president of the Illinois canal commission, in an interview designed to refute certain statements appearing in the newspapers, said: "The canal commissioners have during all the controversy between them and the sanitary trustees endeavored to serve the interests of the state, and have acted upon the best legal advice.

"I want to say that when the sanitary district of Chicago will agree to furnish six feet of water to the summit level of the canal for navigation purposes there will probably be a settlement of the remaining controversy between the state and the sanitary district. The canal commissioners invite the closest scrutiny of their official acts."

**NO RIVER AND HARBOR BILL.**

Chairman Burton, of the river and harbor committee, has authorized the following statement:

"There will probably be no river and harbor bill at the present session. One strong argument against a bill is the fact that the engineers' force will be occupied during the coming year with projects already provided for. In many cases plans for improvements are not even completed. In others advertisements for bids have not yet been made. Another fact of importance is the increase in the price of material in the last year. Some of the projects already authorized cannot be completed for the amounts estimated by the engineers.

"Of course the demands on the treasury and the amount of revenue are facts to be taken into consideration, although I do not mean to say by that, river and harbor improvements are less important than others. It is only because contrary to usual custom the bill was passed during the last session of the last Congress. I recognize, however, that on many accounts it is preferable that the bill be considered at this session. There is so large an amount of detail and the settlement of disputed questions arising from amendments of the Senate make it desirable to have plenty of time. This is hardly possible during the short session."

**PROSPERITY ON THE LAKES.**

The season of navigation now closed has been the busiest and most prosperous the Great Lakes have ever known. Everybody interested in the lake marine industry, from owners down to deck hands, has made money. There have been no disastrous storms, and so the underwriters are happy. The latter third of the season witnessed an enormous advance in the value of vessel property. Paying business for the next season is assured, for within the last week contracts for fully 10,000,000 tons of iron ore from Lake Superior have been made on basis of \$1.25 per ton as against 60 cents per ton last year. With so great an advance absorption of tonnage by the ore trade profitable rates in the grain and coal trades are assured.

The magnitude of the commerce of the Great Lakes is not generally appreciated. Full tonnage figures for the season are not yet available, but some of those of the St. Mary's canal are at hand. The freight passing through the locks to the end of November aggregated 24,636,553, tons, an increase over 1898 of 15 per cent. Of this 13,495,000 tons was iron ore, as against 10,000,000 tons last year. Of wheat there was 54,279,000 bushels, with 27,680,000 bushels of other grain, and 6,804,000 barrels of flour. Lumber shipments were 1,032,000,000 feet. Coal to the amount of 823,380 tons of anthracite and about 3,000,000 tons of bituminous went to Lake Superior. Vast quantities of general merchandise were also carried north. The annual freight traffic through the St. Mary's canal is more than five times that through the Suez canal.

More than one-half the commercially effective steam vessel tonnage of the United States is on the Great Lakes. In

modern commerce vessels of less than 1,000 tons register do not count for much. On the lakes there were on June 30 last, the date of the latest official report, 399 steam vessels of 1,000 tons or more, aggregating 812,218 tons. On the Atlantic and Gulf coasts there were only 258 such vessels, aggregating 584,899 tons. On the Pacific coast there were only sixty-six such vessels, aggregating 131,123 tons. The present fiscal year is not likely to add many vessels to the lake fleet. Owing to the great demand for steel, ship plates are hardly obtainable at prices which meet the views of builders and investors. The books of the yards are filled with orders, but unless conditions change materially not one-half the new tonnage sought for the opening of navigation next spring will be in service before midsummer.—Chicago Inter-Ocean.

**STEAMBOAT PASSENGER LINES TO COMBINE.**

During the past few days a report has been current that J. J. Lynn, Port Huron, was organizing a syndicate to control the passenger and freight business on the lower lakes. The report was that Mr. Lynn had already secured options from the Detroit & Cleveland and Cleveland & Buffalo Steamship companies; that he was dickering with other lines, and that his project was so comprehensive that it would even take in the huge boats of the Northern Steamship Co. Inquiry shows, however, that there is very little foundation for these rumors.

Manager Carter, of the Detroit & Cleveland Navigation Co., says his line has not been approached, and is not for sale. Capt. B. W. Parker, of Parker & Millen, says the consolidated White Star Line has received no proposition from Mr. Lynn, nor heard of any syndicate. Other vessel owners talk the same way, the only clue to Mr. Lynn's operations being found in connection with the Clark estate.

Mr. Lynn wanted to get a price on the steamer Frank E. Kirby owned by Mrs. W. O. Ashley, Mr. Dustin and others, but Mr. Dustin informed him that the boat was not for sale, as they had no intention of giving up the Put-in-Bay route, the boat exactly suited their trade and it would cost 40 per cent. more than she was worth to build a new boat. Mr. Lynn got a price from the Clark estate last fall on the steamer Wyandotte, but was told it would hold good only ten days, as the estate must have sufficient time to build a new boat before spring. Lynn did not show up again, and the boat is now out of the market.

Under the conditions of John P. Clark's will the trustees are required to maintain a steamboat line between Detroit, Sugar Island and Hickory Island until the end of their trusteeship, which has still about thirteen years to run. S. S. Babcock, one of the trustees, says they will not sell the route until the expiration of the specified time, and then the purchaser will also have to buy Sugar and Hickory Islands.

The general impression seems to be that if Mr. Lynn is pushing any scheme it is merely as a promotor—to see what prices can be obtained and then try to interest capital.

It should be noted that the foregoing interviews; denials, etc., are just in line with the statements made during the early formation of the American Ship Building Co. when the several yards were brought under the one management, the result, though, was finally accomplished. Another feature in this connection is that Mr. Lynn was the original and moving spirit in forming that syndicate, so that the foregoing may not be such a romance as some folks might think.

**MIRAGE ON LAKE MICHIGAN.**

Michigan City loomed up in mirage to the eyes of thousands of people along the lake front in Chicago not long ago. Its white buildings and its long sandy beach could be so plainly seen by the naked eye that the city, which is some fifty miles from Chicago, seemed as if it were no more than a few miles away.

The sight lasted some hours and was first noticed about 3 o'clock in the afternoon. Spectators walking along Michigan avenue, who saw the strange appearance on the lake, and who cast their eyes southward, first thought that the far-away lake city was some of the out buildings of Hyde Park or South Chicago. But their eyes were deceived, and in looking steadily through the smoke cast over the lake about Chicago they were convinced that it was a view of the Indiana city which met their gaze. A number of steamers but a few miles from Michigan City coming from and making for the harbor were also visible without the aid of glasses. A pall of smoke hovered about the outer harbor of Chicago, but when a gust of wind blew it away the mirage was again seen.—Chicago Chronicle.



## Chicago Nautical School

1513 Masonic Temple,  
CHICAGO.

W. J. WILSON,  
(Late Lieutenant U. S. Navy),  
Principal.

A full and complete course of instruction in lake and ocean navigation. Also special branches taught those desiring to qualify themselves for better positions in the marine service. \$200 in prizes (Great Lakes Register) awarded annually to students. Students taught by correspondence. Students may begin at any time. Send for circular.

## MARINE REPAIRING AT MANITOWOC, WIS.

The Goodrich Transportation Co. are prepared to do all kinds of Repair Work to Machinery.  
Also Joiner Work.

Goodrich Transportation Company's Repair Shops include complete Carpenter and Joiner Shop. New Modern Machine Shop. Blacksmith Shop, including Steam Hammer, Punch and Shears, etc., Brass Foundry.

Repair Shops are adjacent to Dry Dock and are equipped with best Modern Machinery. Portable Electric Drills, etc., complete Electric Power Plant for supplying motors on board ships, and lighting. Night work a specialty. All work in charge of experienced and skilled mechanics. Charges moderate. Twenty-one feet of water alongside of shops.

## Capt. Samuel W. Gould,

265 MARCY AVE., CLEVELAND.

Gives instructions in Ocean Navigation and prepares candidates for the examinations for Master and Pilots' Licenses, before the Local Steamboat Inspectors.

— TAKE —

Wade Park or Payne Ave. Car.

### THE STORY OF A LIFE SAVING STATION.

The transfer of Capt. T. St. Peter of the Jackson Park life saving station to North Manitou Island, and of Capt. William A. Adres of the latter station to succeed Capt. St. Peter at Jackson Park took place in due order as announced several days ago. A Chicago dispatch gives the true inwardness of the transfer as follows:

The reason for the shifting of Capt. St. Peter was given as a violation of rules of the service. He has been in the service twenty-three years, and it is said he has allowed discipline at the station to grow lax and to have lost control of his men. Marine men say that this is not to be wondered at for Jackson Park station is of very little use and the men have nothing to do. "There are fifty places along the shores of the lakes which need a life saving station more than Jackson Park," said a marine man. "The station would never have been placed there except that the house was built as an exhibit for the service at the World's Fair. When the fair was over the officials did not want to tear the house down and tried to remove the Chicago crew there, eight miles from their work. Marine men protested strenuously and retained the station at the mouth of the river. With the exception of going to the assistance of some reckless youth in a rowboat, the crew has had absolutely nothing to do. The Chicago station is on one side and South Chicago on the other. The whole distance is only thirteen miles and to place a crew in the center of this stretch is needless. The marine interests would be far better served if the men were taken with their boats to some of the dangerous stretches of the coast line now unprotected."

### OTTAWA AND GEORGIAN BAY CANAL.

At the last session of parliament, says the Toronto correspondent of the Paper Mill, a grant was voted for the improvement of the upper Ottawa navigation. It was generally understood that this was for the purpose of aiding in the obtaining of a survey of the Ottawa and Georgian Bay canal. At all events, a survey is now in progress, and it is expected that it will be completed to the height of land by the middle of this month. Borings has been made in every hundred feet, and not much rock has been found.

When this survey is completed the canal company will have sufficient data to put the work under contract. The section between Trout Lake and Lake Nipissing has been found not to be the solid mass of land as it was supposed to be, but the engineer in charge of the survey party has been able to utilize a chain of fire, tiny lakes between these bodies. That will overcome the chief difficulty of the route, for the track between Trout Lake and Lake Nipissing is on the summit level, or the "divide," between the Ottawa basin and the Lake Huron drainage.

### DETENTION OF LAKE TRAFFIC.

Senator McMillan this week introduced a resolution calling upon the War Department to supply the Senate with data showing how many days' traffic was stopped by accidents and casualties in the St. Mary's and St. Clair rivers. The resolution also requests information as to the amount of damage caused vessel interests by the delay. The resolution is the first step towards causing relief in these directions. It is recognized that there is urgent necessity for the widening of the channel at various places in St. Mary's river, particularly at the entrance to the Hay Lake cut and

through the cut to Hay Lake, in the vicinity of the Encampment, and at all other points where there is now only a 300 foot channel. It is the only means of preventing blockades to navigation similar to those caused by the Douglass Houghton and Siemens-North Star disasters this summer, which caused a loss of hundreds of thousands of dollars to the vessels and other interests depending on them. Action can be taken none too soon to remedy the evil.

### AN INCENTIVE TO JOIN THE NAVY.

The navy is 4,000 men short of the legal maximum, and this in spite of the best efforts of the recruiting officers. Secretary Long has written a letter calling the attention of Congress to this state of affairs and suggesting that it might offer a decided incentive to enlistments by extending to sailors enlisting the benefit of the act allowing to apprentices a full outfit of clothing not to exceed \$45 in value. Under the present system the men are kept in debt for months after enlistment by the purchase of necessary outfit from advance payments.

### IRON ORE SHIPMENTS.

Transactions in Lake Superior iron ores for next year's consumption have been very large during the past two weeks. The large producers of iron and steel have been free buyers and producers of ore have had no difficulty in disposing of their entire estimated output for the coming year, based upon the scale of prices recently adopted at Cleveland. The information to be gleaned is that the producers of iron and steel are of the belief that ores will be scarce next year. Some estimates are that 20,000,000 tons of ore will be shipped on the lakes in 1900, as against 17,500,000 tons this year, but the conservative estimate among ore men is that next year's business will probably not greatly exceed that of 1889, because this year not only was the greatest possible mining output shipped, but also the accumulation on docks, in some instances of many years' standing.

### NAVAL CONSTRUCTION.

The following is the degree of completion of vessels of the U. S. Navy under construction, according to the figures computed at the office of the Bureau of Construction and Repair, Dec. 1, 1899: Battleships—Kearsarge, 98 per cent.; Kentucky, 97; Illinois, 72; Alabama, 91; Wisconsin, 82; Maine, 17; Missouri, 1; Ohio, 7. Sheathed Cruiser—Albany, 96. Monitors—Arkansas, 8; Connecticut, 32; Florida, 19; Wyoming, 27. Torpedo Boat Destroyers—Bainbridge, 35; Barry, 35; Chauncey, 34; Dale, 50; Decatur, 49; Hopkins, 30; Hull, 29; Lawrence, 72; Macdonough, 69; Paul Jones, 55; Perry, 55; Preble, 55; Stewart, 10; Truxtun, 6; Whipple, 6; Worden, 6. Torpedo Boats—Dahlgren, 99; T. A. M. Craven, 98; Stringham, 87; Goldsborough, 95; Bailey, 58; Bagley, 3; Barney, 3; Biddle, 3; Blakely, 63; De Long, 63; Nicholson, 43; O'Brien, 43; Shubrick, 72; Stockton, 70; Thornton, 67; Tingey, 41; Wilkes, 22. Submarine Torpedo Boat—Plunger, 85.

THE Kingsford Foundry and Machine Works, Oswego, N. Y., have published a dainty little brochure in the interests of their steam and hydraulic pumping machinery. The engravings are very fine. This company also makes a specialty of the manufacture of internally-fired boilers, with rectangular or cylindrical furnaces, for stationary and marine work.

### THE SHIPPING BILL DEFENDED

The American shipping bill of Senator Frye and Representative Payne is undoubtedly open to attack, as is any bill in Congress assailing established interests. If there are any "vested rights," in shipping in this country, they are British and German steamships interests, which are naturally hostile to American competition with their lines. American newspapers, accordingly, should at least study the proposition in Congress before unwillingly striking hands with European corporations which profit by existing conditions. It is not fair to say that the subsidy bill means an expenditure of \$9,000,000 a month when, by its terms, that is the maximum expenditure a year, not to say that \$9,000,000 a year is the minimum expenditure when the bill fixes that amount as the maximum. All Americans favor an American merchant marine. No progress will be made toward getting it if careless and indifferent statements are to appear in print as facts. It would be a pleasure to show that the new expenditures under the bill cannot now exceed \$3,000,000 a year, and that under the maximum fixed we shall compel European capitals to send their passengers and mails for Asiatic ports through New York. This fact is appreciated in London, Paris and Berlin. It will be better understood in New York if our people study the globe.—Eugene T. Chamberlain, in New York Herald.

### ANOTHER PROPELLING DEVICE.

Several months ago mention was made in these columns of a new boat, a roller, or more properly, a revolving boat, which was being constructed by Walter Dean, of Toronto, for Mr. Shaw, of Lake Rosseau, and a syndicate interested in the development of this new idea of propulsion.

The boat has advanced to that stage when she is nearly ready for launching.

Imagine a cigar-shaped hull about thirty feet in length, supplied with engine, steering gear, etc., in this instance the hull of the small experimental craft differs from the usual construction in that it consists of a cylinder about one-half the length of the boat, situated in the center of and passing entirely round the hull proper. This cylinder is supplied with fins or wings running diagonally around from one end to the other, and rotating through the water that gives motion to the hull. The keel, connected at both ends to the hull proper, hangs below the revolving cylinder.

There is a principle being developed in this little craft, which, if a success, it is thought will cause considerable comment and attract attention from all parts of the world.

Walter Dean recently shipped a fine lot of canoes to Paris. This shipment of mahogany canoes will be followed soon by another lot, all going to a club on the Seine.

### NOTICE TO MARINERS.

LIGHT-HOUSE ESTABLISHMENT,  
OFFICE OF THE LIGHT-HOUSE INSPECTOR, 9TH DIST.,  
CHICAGO, Ill., Dec. 16, 1899.

### CLOSING OF LIGHT STATIONS.

Notice is hereby given that the Skilligalee Light and Fog-Signal Station, Lake Michigan, Petoskey Breakwater Light, Petoskey, and Portage Lake Range Lights, entrance to Portage Lake, Michigan, have been closed for the winter.

By order of the Light-House Board,

F. M. SYMONDS, Commander U. S. Navy,  
Inspector Ninth Light-House District.



## SHIPPING AND MARINE JUDICIAL DECISIONS.

(COLLABORATED SPECIALLY FOR THE MARINE RECORD).

Shipping—Fraud of Shipper—Description of Goods—Loss of Memoranda.—A shipper who puts books containing valuable memoranda, with some clothing, in a package described in the bill of lading as worn clothing, is guilty of fraud, destroying his claim to indemnity. The St. Cuthbert, 97 Fed. (N. S.) 340.

Shipping—Delivery to Customs Officers—Usage.—A ship's delivery of a consignment of dutiable goods to the customs authorities, being required by the law and usage of the place, delivery to the proper party thereafter devolving on such authorities, is a good delivery as between the shipper and carrier. Herbst vs. The Asiatic Prince, 97 Fed. Rep. (U. S.) 343.

Collision—Steamers Crossing—Lookout—Change of Course.—An incoming steamer, bound up East river, which took a diagonal course across the river and across the course of a tug with a tow crossing from Brooklyn and having the right of way, when by the rules and state statutes she was required to keep to the right and as near the middle of the river as might be, held in fault for a collision with the tow. The tug also held in fault for failing to keep a proper lookout and for changing her course. The James A. Lawrence and the Comanche, 97 Fed. Rep. (U. S.) 351.

Shipping—Liability to Shipper—Memoranda of Entries, "Writings"—Notice of Valuable Memoranda Must be Given.—Memorandum books containing entries of one's experiences and observations at different times and places in the line of his business, valuable to him for reference, are "writings," within Rev. St. Sec. 4281, relating to a large number of small articles of small size, but of proportionately large value, including "writings," and providing if a shipper shall lade them as freight on any vessel without giving notice of the true character and value thereof, the owner of the vessel shall not be liable therefor; but such memoranda are not within a like exception of the bill of lading as to "documents." The St. Cuthbert, 97 Fed. Rep. (U. S.) 340.

Shipping—Rights of Consignee—Application of Payments—Bills of Lading Wrongfully Withheld.—H., a commission merchant, had an agreement to buy goods for B. & Co., on their orders, and ship the same to them on their account and risk, and to allow them a credit of \$5,000; all invoices to be charged in account current and to bear interest from date of shipment, payments to be by remittances after notice of shipment, remittances to bear interest from time of receipt. Held that B. & Co., having, after notice of shipment but before arrival of the goods, sent remittances for part of the price, with notice that they were on account of such shipment, and having, after arrival of the goods, made tender and deposit of the balance of the price, were equitably entitled to delivery, H. having no right to make application of the remittances on an old account; that the bills of lading were wrongfully withheld, and that the carrier was not liable for irregularity in delivering the goods to B. & Co. without the bills of lading. Herbst vs. The Asiatic Prince, 97 Fed. Rep. (U. S.) 343.

## A DAVIDSON STORY.

The Detroit News has the following story this week: Three vessels came down the river and put in at Hurley's coal dock for fuel yesterday. In the middle of the string was the barge Matanzas, that lost almost all her rudder by smashing into the channel bank of the Soo river. Ahead was the steamer Rappahannock, and astern, trailing on a steering line from the end of the Matanzas, was the steamer Venezuela. Her duty had been to keep the big barge from getting into further trouble.

All three vessels belong to Capt. James Davidson. They are big wooden boats, and the owner is always ready to run long risks with the chance of large winnings. He is not only running the vessels without insurance, but in order to get the cargoes of grain that two of the three boats are carrying had to personally insure the safe delivery of the grain. The value of boats and cargoes is almost a million, yet with a disabled boat in the center, the string started from the Soo for Lake Erie.

When Detour was reached, the gale was raging on Lake Huron, and four days were lost waiting for fair weather. At last the storm abated, and on Friday, with awful suspense staring the captains in the face, a start was made. On the icy deck Capt. Wilam, of the Matanzas, slipped and dislocated his shoulder. The boats were all coated with ice, and the hatches were as effectually sealed up as though with sealing wax.

Not a sign of bad sailing was seen. At Port Huron the disabled captain was put off for repairs, and Capt. Davidson, the owner, came aboard the barge to take command.

While passing down Lake St. Clair there was a snap, and the tow line to the Matanzas from the Rappahannock broke off close to the barge. The Venezuela did her duty, and there was no ramming of the forward boat nor grounding of the tow, and in a short time the loose end of the tow line was fished up out of the lake, again made fast to the Matanzas, and the journey was resumed.

As she stopped at Detroit, the wealthy owner was stumping up and down the long deck with an old cap pulled down on his head. He looked the typical sailor and a reminder to many other vesselmen when bossing a boat was the best job that Capt. Davidson had.

## LAKE TRAFFIC.

The closing of the Sault Ste. Marie locks, on Sunday afternoon, marks the close of a long and exceptionally prosperous season for the lake shipping trade. The phenomenal rise in rates, due to the enormous demand for iron ore by the iron and steel manufacturers of the country, has made a fortune for such vessel owners of the lake carrying trade as were free from season contracts and able to take advantage of the situation.

The present outlook shows no signs of a diminution of iron ore requirements in the immediate future. Therefore, the boats tie up for the winter not only with a consciousness of a profitable season behind them, but also a certain outlook for another prosperous and busy year when the channels open again next spring.

In the suit for an injunction to prevent the Connors syndicate from getting their grants from Montreal, Judge Pagnuelle has requested the harbor commissioners to make affidavits that elevators are actually needed there.

## REPORTED BY THE LOOKOUT.

The Mitchell and Folsom owned by Capt. Mitchell Bay City, are being rebuilt at the Gilmore yards Toledo.

The steamer Elfin-Mere struck bottom while entering the harbor at Oswego last week, and received damages which necessitated taking her to the government dry dock at Kingston, Ont., for repairs.

Owing to the lack of discipline among his men Capt. E. St. Peter has been transferred from the Jackson park life saving station at Chicago to North Manitou station, exchanging places with Capt. Wm. L. Andres.

Secretary Gage asks Congress for \$10,000 more with which to keep up the light-houses. On the lakes and seaboard 37 new houses are building for next year, and the appropriation is to cover the cost of maintaining these new stations.

Commander Kennedy, U. S. N. light-house inspector, says the Grosse Pointe lightship is in very bad condition and was dangerous to the lives of the keepers for some time before it was taken in. He wants a better lightship for next year.

The difficulties connected with insurance of the American line steamer Paris, which ran on the rocks off the Manacles on May 21 last and which was refloated July 11, have been settled. The vessel will be handed over to Harland & Wolff, at Belfast, for a thorough overhauling. When she resumes her place in the trans-Atlantic service a year hence she will be re-named after an American city.

One of the largest dry docks in the United States is soon to be constructed at Hunter's Point San Francisco. It will be built over a natural rock basin, and will cost about \$750,000. The dock is to be 750 feet long, 80 feet wide at the bottom and 120 feet wide at the top. It will have 28 feet of water over the sill at low tide. It will be slightly larger than the dock at the Boston navy yard, and will be able to accommodate any vessel on the Pacific coast.

The schooner Morning Star, bound from Charlevoix to Chicago with lumber, went ashore last Monday morning on the east side of South Fox Island. She struck a sandy bottom. There she remained until the northeast gale came, which wrecked the boat and piled her deckload upon the shore. The schooner became a total loss but her crew were all saved. The Morning Star was owned by F. X. Ulrich of Milwaukee. She was built in 1868 and was of 205 tons.

The anxiety of underwriters regarding fall cargoes of grain and their determination, after a prosperous season, to grant only such extensions of policies as they were absolutely compelled to accede to, may be understood when it is noted, for instance, that two cargoes of flax seed moved down the lakes in the closing days of the season by the steamers H. C. Frick and J. J. McWilliams were valued in round figures at \$560,000. The Frick carried 240,000 bushels and the McWilliams 160,000 bushels.

Barry Bros., of Chicago, who have extensive interests in floating property, have had a tug building at Burger & Burger's, Manitowoc, she is now finished and left the hands of her builders on Saturday. She has been christened the Robert E. Burke, is 95 feet long by 21 feet beam, and cost complete \$12,000. With two other tugs she will do work for the city of Chicago, carrying men and provisions to the cribs, and breaking ice in the river and keeping the harbor open during the winter months.

TOBIN BRONZE

(Trade-Mark Registered.)

Tensile strength of plates one-quarter inch thick, upward of 78,000 lbs. per square inch. Torsional strength equal to the best machinery steel. Non-corrosive in sea water. Can be forged at cherry red heat. Round, Square and Hexagon Bars for Bolt Forgings, Pump Piston Rods, Yacht Shafts, etc. Rolled Sheets and Plates for Pump Linings and Condenser Tube Sheets, Centerboards, Fin Keels and Rudders.

The Ansonia Brass &amp; Copper Co.

SOLE MANUFACTURERS,

Send for Pamphlet.

99 John St., NEW YORK.

S.F. HODGE &amp; CO.

MARINE ENGINES,  
PROPELLER WHEELS,  
DECK HOISTERS,  
MARINE REPAIRS.  
312 ATWATER STREET,  
DETROIT, MICH.

Chas. E. &amp; W. F. Peck,

58 William Street, New York City.

Royal Insurance Building, Chicago, Ill.

C. T. BOWRING &amp; CO.

5 and 6 Billiter Avenue, E. C.,

London, England.

Insurance

BROWN & CO., - - - 202 Main Street, Buffalo, N. Y.  
PARKER & MILLEN, 15 Atwater Street, W., Detroit, Mich.  
J. G. KEITH & CO., - 138 Rialto Building, Chicago, Ill.  
LA SALLE & CO., Board of Trade Building, Duluth, Minn.

Are prepared to make rates on all classes of Marine Insurance on the Great  
Lakes, both CARGOES AND HULLS.

The Salvage Association of North America.

INCORPORATED 1899.



AN ASSOCIATION FOR THE PROTECTION OF UNDER-  
WRITERS' INTERESTS AS REGARDS WRECKED  
AND DAMAGED PROPERTY AT SEA.

Application for the services of surveyors of this Association  
may be made to either the Chicago or New York offices.

Chicago Office,

ROYAL INSURANCE BLDG.

New York Office,

MUTUAL LIFE INS. CO. BLDG.



## Prominent Fueling Firms==Docks and Lighters.



### Steamboat Fuel at Chicago.

YOUGHIOGHENY and LEHIGH COAL CO.  
J. T. CONNERY, Manager. ARCHIE J. HITCHCOCK, Dock Supt.  
MAIN OFFICE: 1238-1242 Chicago Stock Exchange Building.  
Long Distance Telephone, Main 5049. 110 LA SALLE STREET.

**FUEL DOCKS:** No. 1, Michigan Slip and Basin. 'Phone 3046, Main.  
No. 2, N. Halstead St. Bridge. 'Phone 773, North.  
**FUEL LIGHTER:** Equipped with 125 2-ton Buckets for Fueling anywhere in Harbor

WE PRODUCE OUR YOUGHIOGHENY COAL, AND GUARANTEE QUALITY.



### Steamboat Fuel at Cleveland.

THE PITTSBURGH & CHICAGO GAS COAL CO.  
J. A. DONALDSON, Manager. N. J. BOYLAN, Fuel Manager.  
OFFICE: 420-421 PERRY-PAYNE BUILDING.  
TELEPHONE, MAIN 1888.

**FUEL DOCKS:** No. 1, River Bed, through Valley R. R. Bridge. } Telephone, West 190.  
No. 2, Main River, Foot of West River Street. }  
**FUEL LIGHTER:** 300 Tons Capacity; Fuel Anywhere in the Harbor.

## PICKANDS, MATHER & Co.

PIG IRON.  
IRON ORE AND COAL.

**FUEL LIGHTERS**

AT BUFFALO, At DETOUR, MICH., A FUEL DOCK equipped with  
ERIE, Shute capacity of 600 Tons.  
ASHTABULA, Best Quality PITTSBURGH COAL furnished at any  
AND CLEVELAND. time during Day or Night.

WESTERN RESERVE BUILDING, CLEVELAND, O.

## M. A. HANNA & Co.

COAL, IRON ORE AND PIG IRON.

### Steamboat Fuel at Ashtabula.

Large Supplies of Best Quality.

Fuel scow with elevators and discharging spouts. Storage of 650 tons. Discharges 150 tons an hour into steamers while unloading cargo.

**LIGHTER**

carrying different grades at all times.

MINERS AND SHIPPERS.

MAIN OFFICE, Perry-Payne Bldg., Cleveland, O.

## THE W. L. SCOTT COMPANY,

ERIE, PA.

WHOLESALE DEALER IN

Shamokin-Wilkes Barre ANTHRACITE.

Youghiogheny, Mansfield, PITTSBURG.

Vessel Fueling a Specialty

by steam lighter or car dump,  
at all hours. Electric light.

MAIN OFFICE: SCOTT BLOCK. LONG DISTANCE 'PHONE 440.

FUELING OFFICE: CANAL DOCK. LONG DISTANCE 'PHONE 320.

# ...Coals

## Youghiogheny River Coal Co.

MINER AND SHIPPER OF

# OCEAN MINE COAL.

YOUGHIOGHENY  
GAS AND STEAM

General Office:  
Erie, Pa. Long Distance 'Phone 409.

Shipping Docks:  
Ashtabula, O. Long Distance 'Phone 76.

VESSELS FUELED AT ALL HOURS

ELECTRIC LIGHT.

WITH OCEAN COAL ONLY,  
BY STEAM LIGHTER OR CAR DUMP

Use the Vanduzen  
Steam Jet...

# PUMP

THE BEST STEAM JET PUMP IN THE WORLD.



It pumps the most water using the least steam.

Its cost is a little more than the common syphon, but will use only one-third the quantity of steam; and it takes coal (? of \$) to make steam.

The only reliable Jet Pump for fires on steam vessels.

A No. 7 Pump, costing \$25.00, will force water through 50 feet of hose and throw a 3/4-inch solid stream of water 75 feet from end of nozzle without fail as long as there is water at end of suction pipe. It will not freeze. Has no valves.

Every pump guaranteed. Ask your ship chandler for them, or write to us for illustrated catalogue.

THE E. W. VANDUZEN CO., CINCINNATI, O.

## The Cuddy-Mullen Coal Co.

Miners and  
Shippers of

# STEAM COAL

FUELING DEPARTMENT  
FACILITIES. ❖ ❖ ❖ ❖

CLEVELAND HARBOR.—Car Dumper; Eight Pockets, 1000 Tons Capacity; Lighter Steam Derricks.

DETROIT RIVER BRANCH.—Amherstburg: Four Pockets; Three Steam Derricks  
SANDWICH—Fourteen Pockets and Two Steam Derricks.

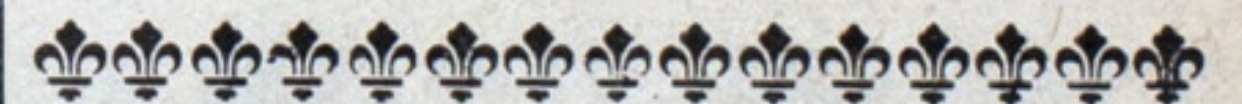
"SOO" RIVER BRANCH.—Two Docks, (Formerly known as the Anthony and Watson Docks,) Equipped with Pockets and Steam Derricks.

GOOD  
COAL.

COURTEOUS  
ATTENTION

QUICK  
DISPATCH.

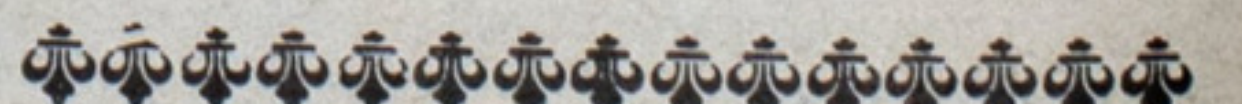
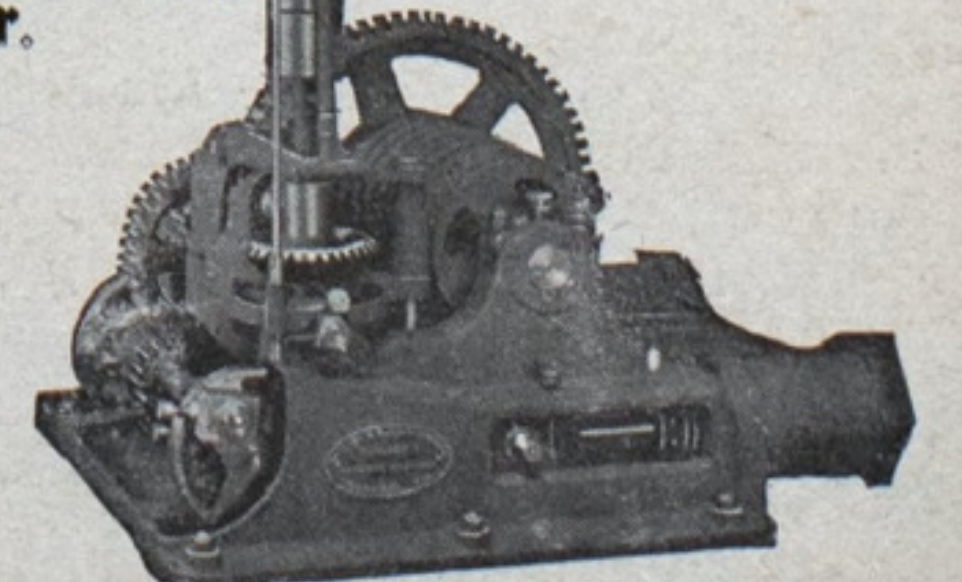
General Offices, Perry-Payne Bldg., Cleveland, O.



Simplest,  
Strongest  
and most  
Reliable.  
Changed  
from Steam  
to Hand or  
back by one  
lever in less  
than one  
Second.

No. 8  
Beck Patent  
Steam and  
Hand Steering  
Gear.

BUILT BY  
Pawling & Harnischfeger,  
Milwaukee, Wis.



# PATENTS

Procured on Inventions  
and Designs. Labels,  
Prints and Trade Marks  
Registered

Sixteen Years' Experience.

R. W. BISHOP, - Washington, D. C.

# \$2.00

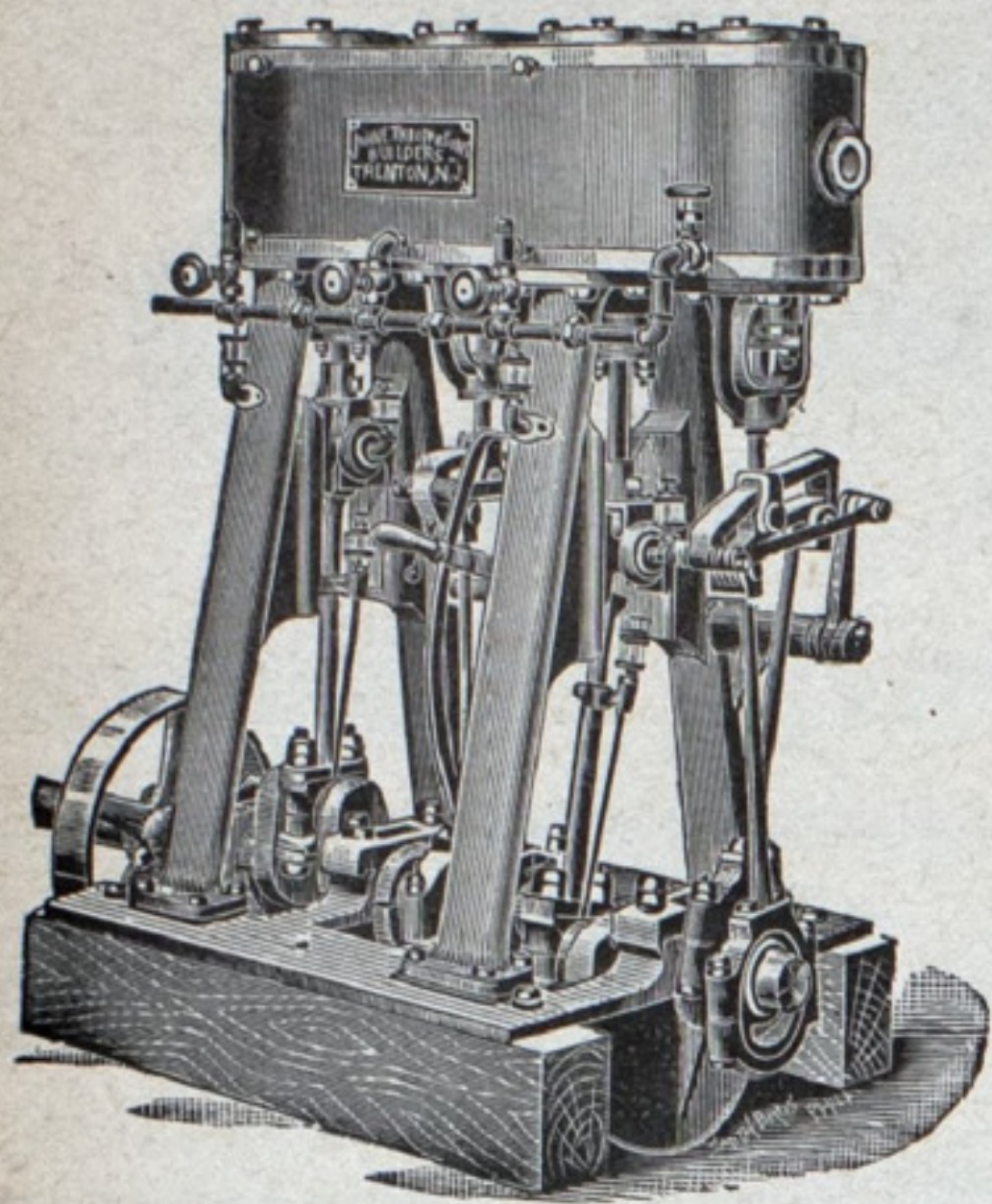
Pays for 52 copies of  
The Marine Record in-  
cluding Supplements.

PRACTICAL  
MECHANICS.

Applied to the requirements  
of the sailor. By Thos. Mc-  
Kenzie. Illustrated; 12 mo.;  
cloth, \$1.50, by mail prepaid.  
The Marine Record, Western  
Reserve Bldg., Cleveland, O.



# John E. Thropp & Sons' Co.



BUILDERS OF  
Compound and Triple Expansion  
**ENGINES,**

Boilers, Surface Condensers, Propeller  
Wheels, Etc.

Contracts taken for yachts and tugs  
complete. Send for photographs of En-  
gines and descriptive pamphlet.

Works on Delaware & Raritan Canal Basin.  
**TRENTON, N. J.**

## The KENNEY FLUSHOMETER

FOR FLUSHING WATER CLOSETS.

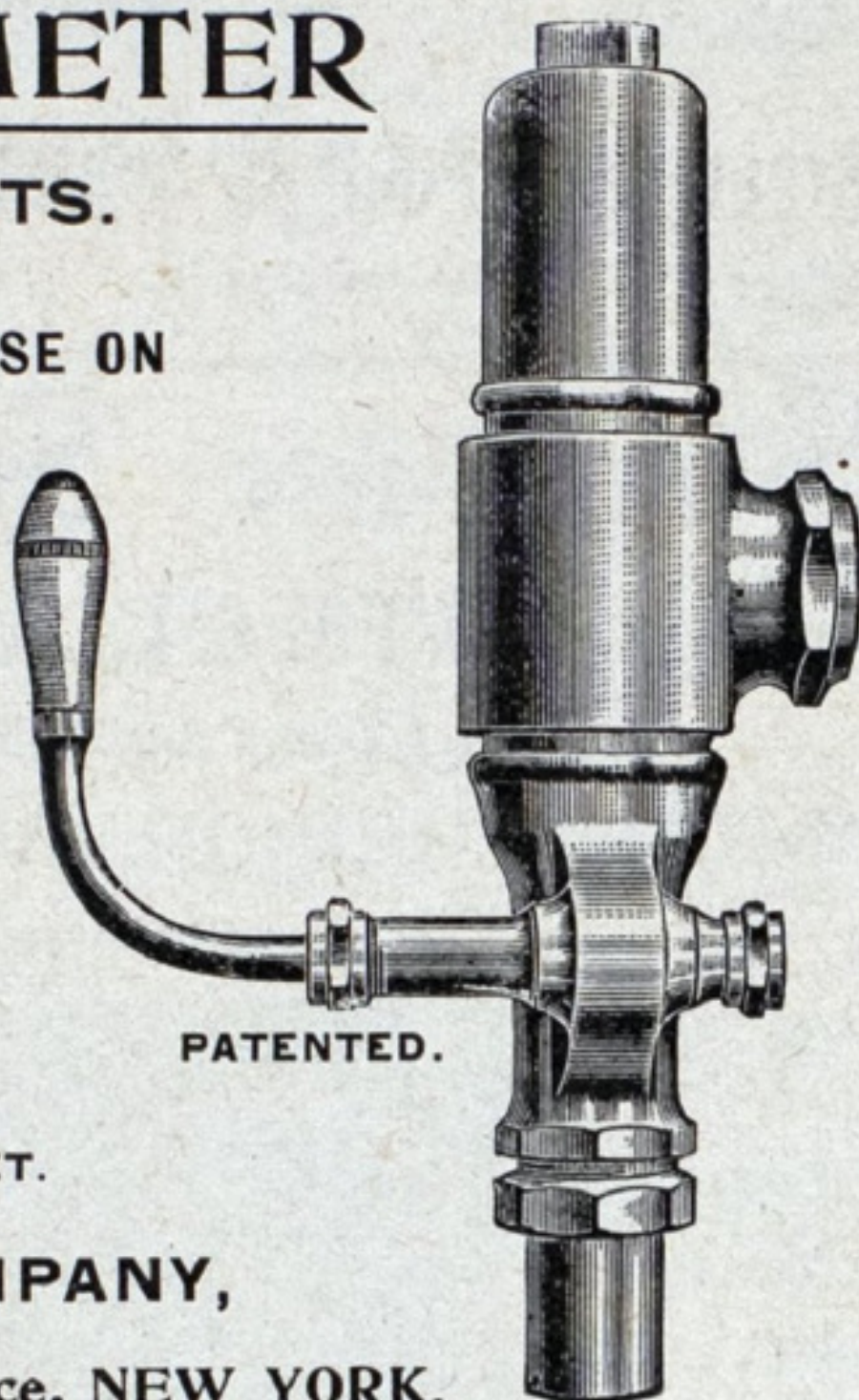
No Cup Leathers or Springs.

THE BEST SYSTEM EVER INVENTED FOR USE ON  
STEAM VESSELS.

Owners and constructors of Steamships, Yachts and  
Steamboats have found it indispensable. Used by  
the U. S. War and Navy Departments. Transports  
Grant, Sheridan, Burnside, Ter-  
ry, Hooker, Thomas, Sedge-  
wick, Meade, McClellan, Sher-  
man, Crook. Also Albany Day  
Line Steamers and others.



Showing application of  
Flushometer.



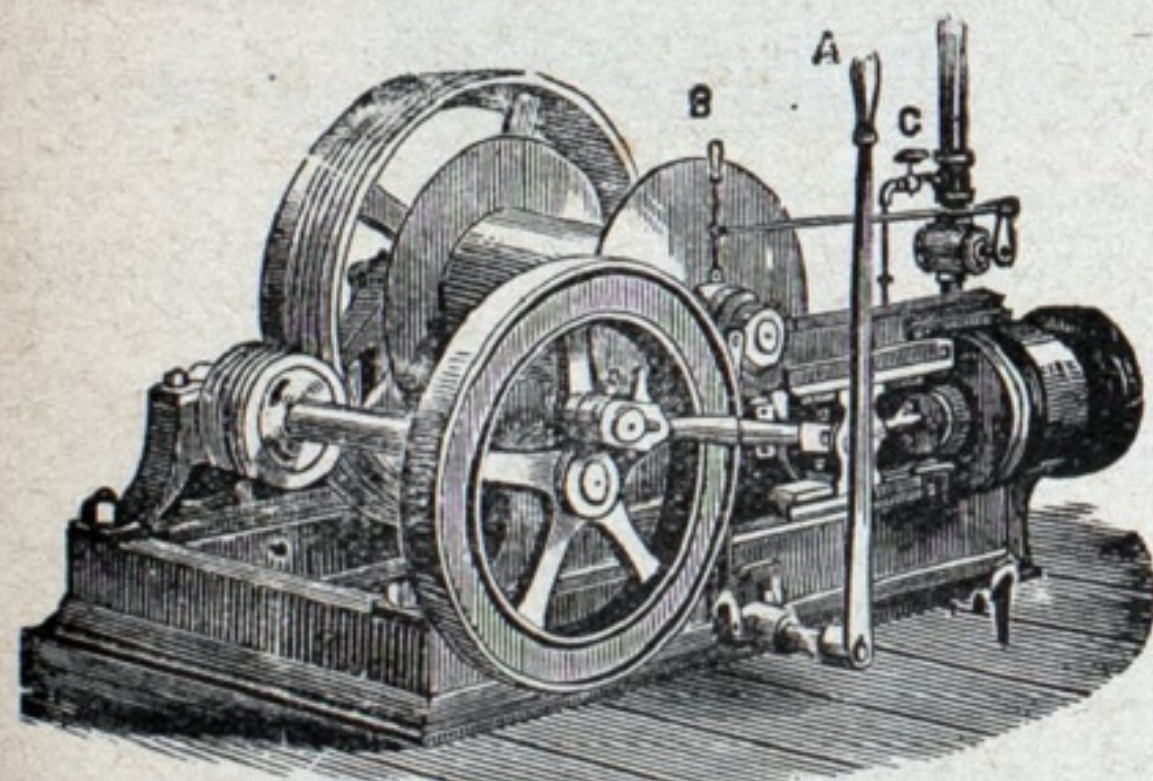
PATENTED.

SEND FOR ILLUSTRATED PAMPHLET.

THE KENNEY COMPANY,  
72-74 Trinity Place, NEW YORK.

## WILLIAMSON BROS.

COR. RICHMOND AND YORK STS.,  
Philadelphia, Pa.



HOISTING and SHIP ENGINES  
STEERING ENGINES.

With either Fractional, Spur or Worm Gear of  
Various Patterns to Suit all Purposes.

### Compasses Adjusted

For deviation, and deviation  
tables supplied. Great facilities  
for doing the work by day or  
night.

**John Maurice.**

Office, 24-26 Market St., CHICAGO.  
Residence, 1213 Albany Avenue.

Scott's Coast Pilot for the Lakes.

Price, \$1.50.

For Sale by  
THE MARINE RECORD,  
Western Reserve Building, Cleveland.

JOHN DONNELLY, SR., PRES.  
JOHN DONNELLY, JR., VICE PRES.

## THE DONNELLY SALVAGE AND WRECKING CO., Ltd.

KINGSTON, ONT.

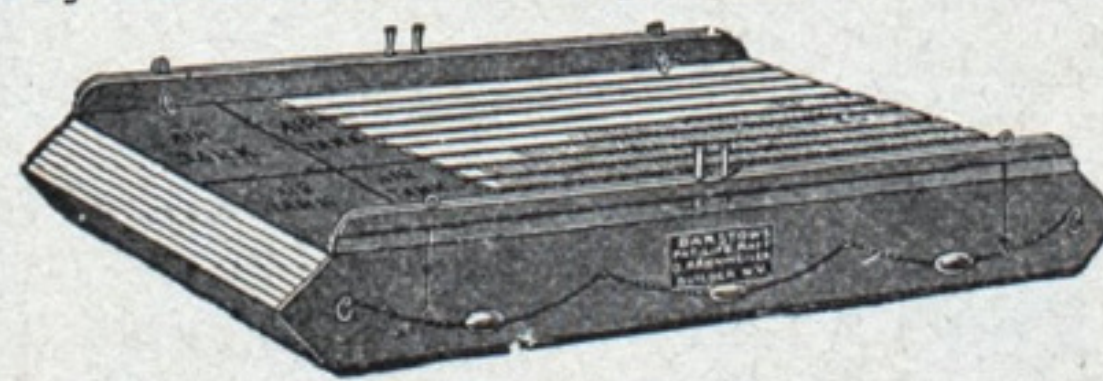
EXPERIENCED DIVERS, TUGS, STEAM PUMPS, ETC.,  
SUPPLIED ON SHORTEST NOTICE.

### NEVERSINK CORK JACKET AND LIFE BELT.

Warranted 24 lb. Buoyancy and full Weight of Cork, as required by U. S. Inspectors. Consolidated Cork  
Life Preservers. Superior to all others. Rings Buoys and Fenders. SAFEST CHEAPEST.  
Approved and adopted by U. S. Board of Supervising Inspectors.  
Also adopted by the principal Ocean, Lake and River Steamer Lines as  
the only Reliable Life Preserver. Vessels and trade supplied. Send for  
Catalogue.  
Awarded four medals by World's Columbian Exposition.



METALLIC  
and  
WOODEN  
LIFE  
BOATS.



Metallic Life Rafts, Marine Drags.

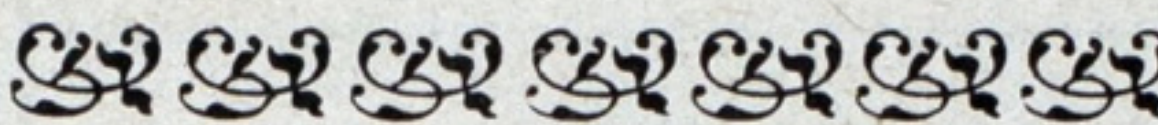
Manufacturer of Woolsey's Patent Life Buoy, which is the lightest,  
cheapest and most compact Life Raft known. Send for illustrated cata-  
logue. Get our prices before buying elsewhere.

D. KAHNWEILER'S SONS, 437 Pearl St., New York City.



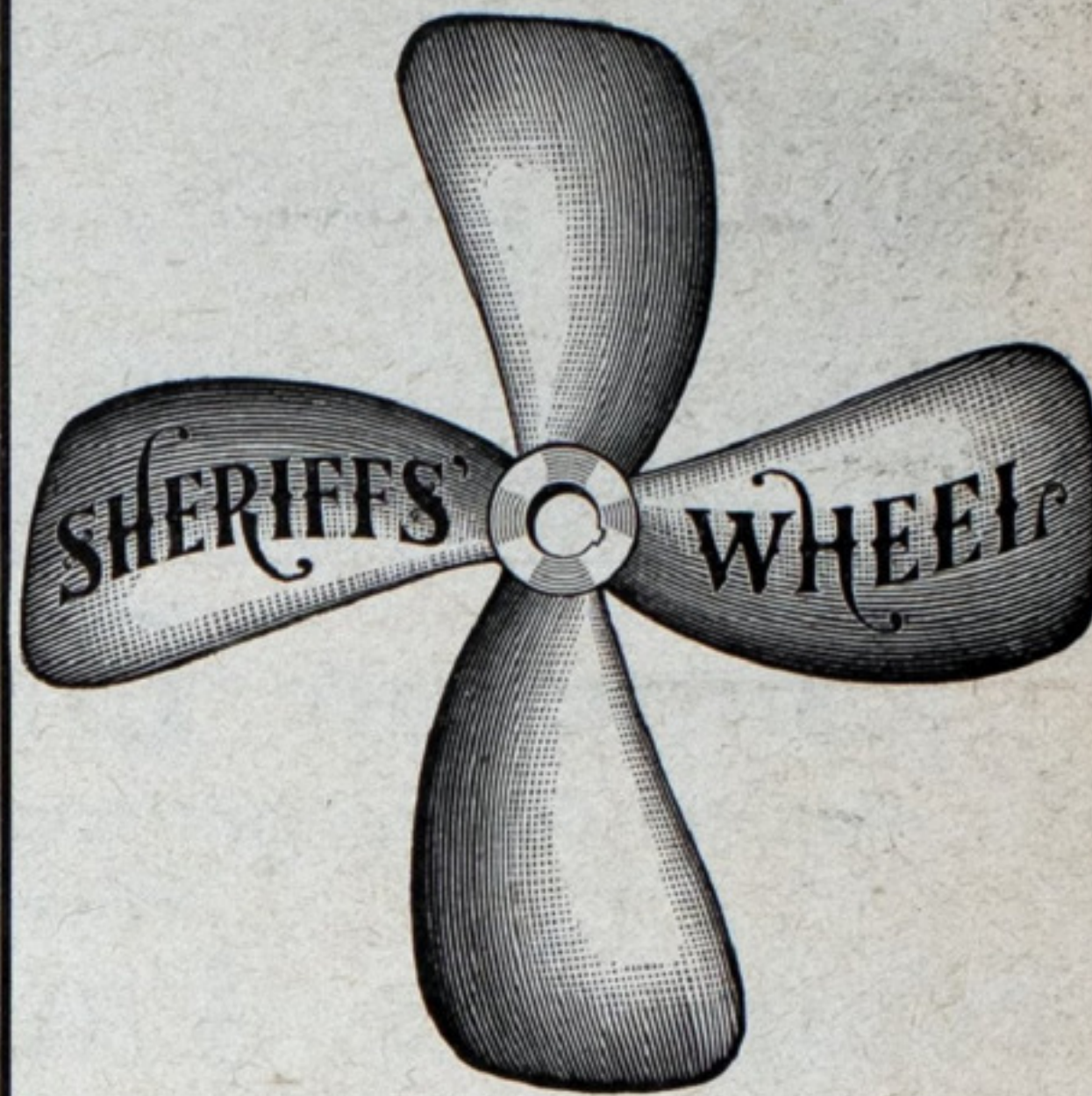
## Ship Yard for Sale.

The well-known yard and dry dock at New  
Baltimore, New York, fifteen miles below  
Albany. Has one large marine railway,  
steam saw and planing mill, timber slip,  
mould loft and all necessary facilities for the  
business; plenty of room for sliding off  
either side of dry dock for repairs or build-  
ing new vessels; has a water front of 500  
feet, with docks and buildings in good re-  
pair; well equipped and good facilities for  
getting timber by water or rail. This yard  
has done a prosperous business for many  
years. All in first-class order. Good rea-  
sons for selling. Terms easy. A good  
opportunity for the right party. For full  
particulars and terms address the owner,  
Wm. H. Baldwin, New Baltimore, Greene  
County, N. Y. 47-8



## SHERIFFS MFG. CO.

ESTABLISHED 1854.

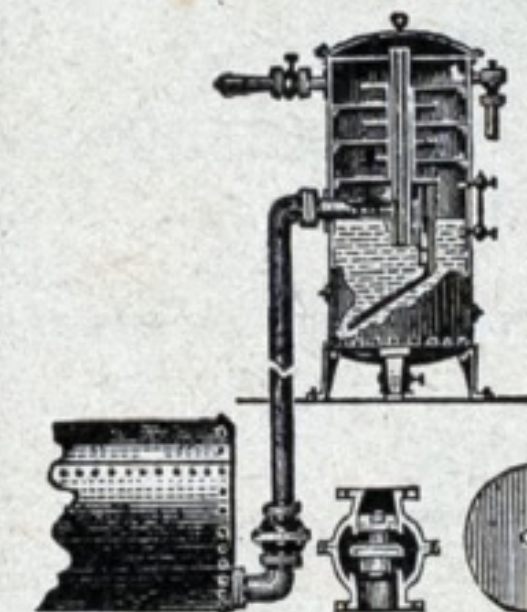


MILWAUKEE, WIS.

## THE CHASE MACHINE COMPANY, ENGINEERS AND MACHINISTS.

MANUFACTURERS, UNDER THE CHASE PATENTS, OF  
Fog Whistle Machines, Hoisting Engines, Steering Engines Automatic Towing Engines,  
Power and Drop Hammers, and other Machinery. Engineers' Supplies and General Jobbing.

111 ELM STREET. TELEPHONE, MAIN 994. CLEVELAND, O.



## Buffalo Feed Water Heater AND PURIFIER.

Made in all Sizes and to Suit all Conditions.

ROBERT LEARMONTH,  
200 Bouck Ave., BUFFALO, N. Y.

Send for Catalogue.



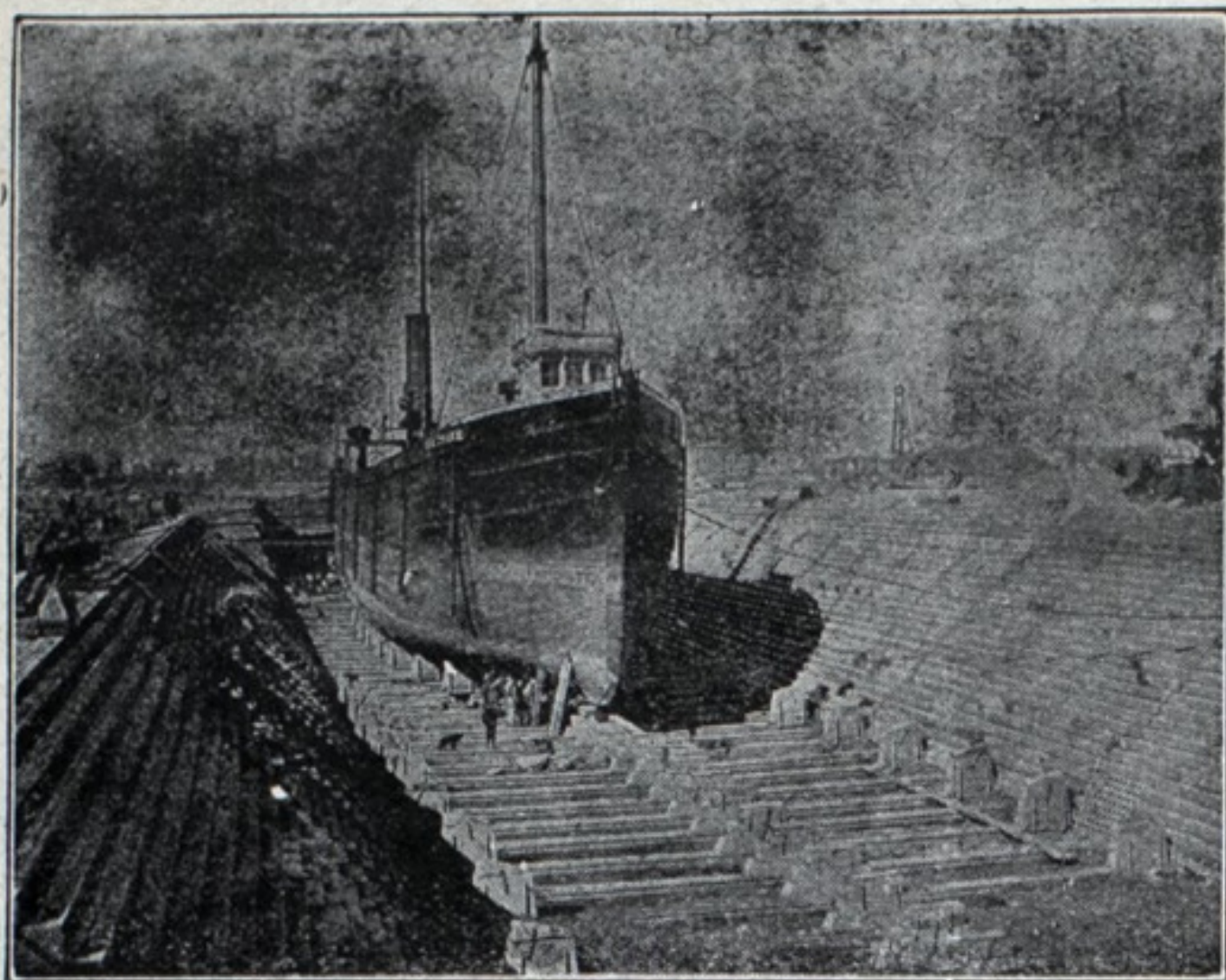
### Sellers' Restarting Injector

A strictly first class  
machine at moderate  
cost. Perfectly auto-  
matic, has wide  
range of capaci-  
ties, and raises  
water promptly  
with hot or cold pipes. Very simple,  
has few parts and is easily repaired.  
All parts interchangeable, made of the  
best bronze, and the workmanship is  
perfect. Send for special catalogue de-  
scriptive of this Injector.

JENKINS BROTHERS, Selling Agts.  
New York, Boston, Phila., Chicago.







# Craig Ship Building Co.

## TOLEDO, OHIO.

New Dry-Dock 450 feet long, 110 feet wide on top, 55 feet wide on bottom, 16 feet water on sill.

Repairs to Metal and Wooden Ships a Specialty.

**Metal and Wooden Ship Builders.**



## Simpson Dry-Dock Co.

General Contractors and Consulting Engineers,

BUILDERS OF

## Simpson's Patent Dry-Dock,

35 BROADWAY, NEW YORK.

THE BEST BOOK OF AMERICAN LAKE SHIPPING.

## BEESON'S MARINE DIRECTORY FOR 1899.

A cloth bound, gilt embossed volume of 260 pages, containing alphabetically arranged lists of all American steam and sail vessels on the Northwestern lakes, giving tonnage, length, breadth and depth of each, place and year of build, and name and address of managing owner. These lists are the originals published annually and are not taken from other publications. Their correctness is all that can be possibly obtained in a technical work.

Many miscellaneous features are comprehended in its contents. Among them a list of American lake ports, with description of each, numbering over two hundred.

Mailed to any address, postage prepaid, on receipt of subscription, \$5.00.

The Marine Record, THIRD FLOOR, WESTERN RESERVE BUILDING, CLEVELAND, O.

LIFE BOATS.

YAWLS.

LIFE RAFTS.

## DETROIT BOAT WORKS

DETROIT, MICH.

STEEL, IRON AND WOODEN TUGS.

STEAM AND SAIL YACHTS.

ALL KINDS OF PLEASURE BOATS, FISHING AND HUNTING BOATS, SHELLS, BARGES, GIGS AND CANOES.

## Safety Hollow Staybolts

Guaranteed to meet Government Specifications and Inspection.



MANUFACTURED FROM

BEST QUALITY STEEL OR CHARCOAL IRON.

FALLS HOLLOW STAYBOLT CO.,

Cuyahoga Falls, O.

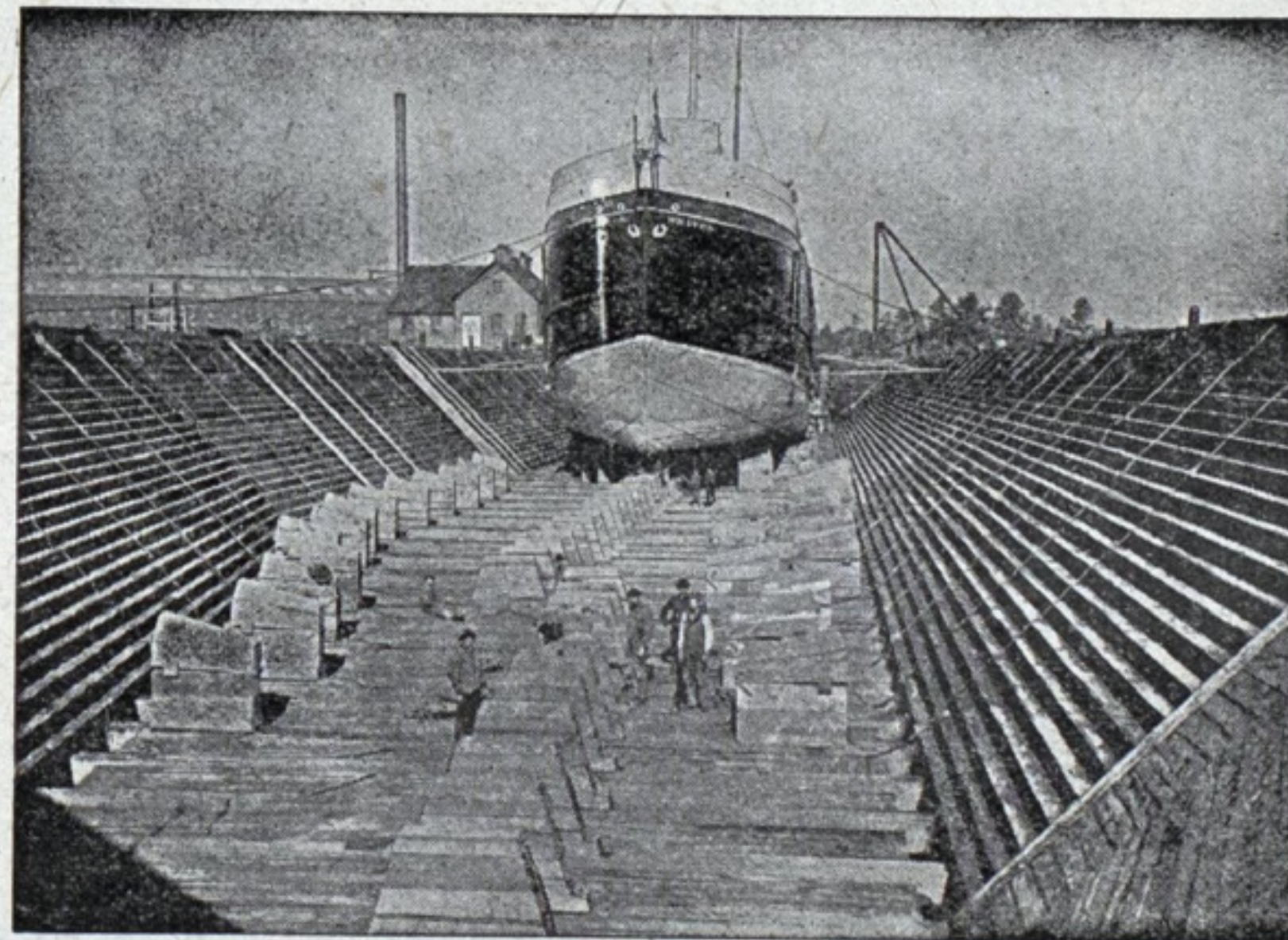
Write for Samples and Prices.

## Superior Ship Building Co.

### STEEL AND METAL SHIPS

Of all Classes built on shortest possible notice at our yards at WEST SUPERIOR, WIS., and also at EVERETT, WASH.

PHOTOGRAPH OF 300-FOOT BOAT IN DOCK.



Plates and Material always on hand to repair all kinds of Metal Ships in Shortest Time.

Best Quality of Oak in Stock for Repairing Wooden Vessels of all Classes.

### SIZE OF DOCK

Length, Extreme.....	587 feet.	Entrance, Top.....	55 feet 9 in.
Breadth, Top.....	90 " 4 in.	Entrance, Bottom.....	50 "
Breadth, Bottom.....	52 "	Depth over Sills.....	18 "

LARGEST DRY-DOCK ON THE LAKES.

Prices for Repairs and Docking same as at Lower Lake Ports.

SUPERIOR, WIS.

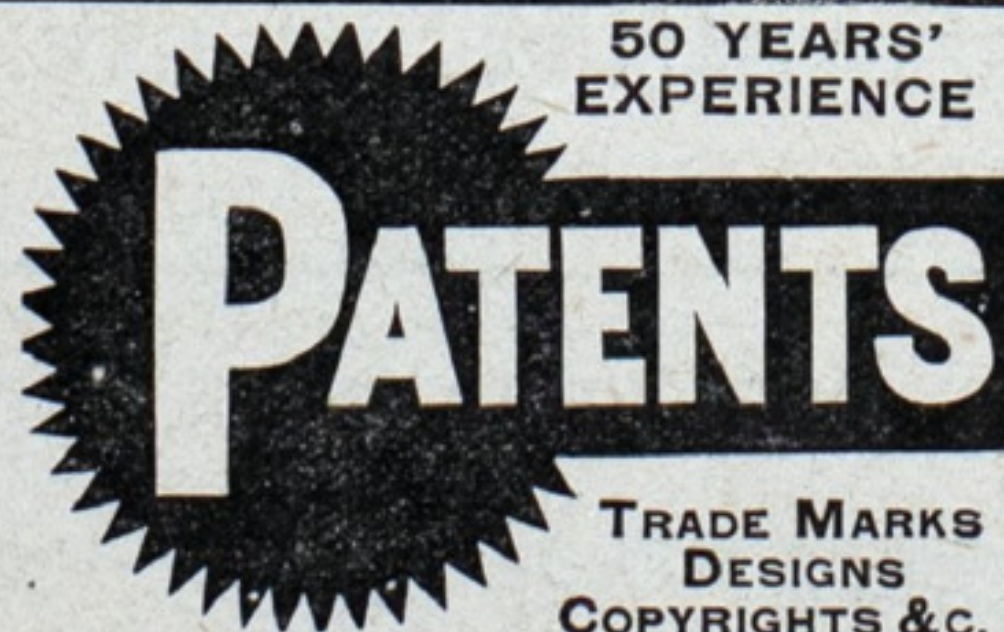
A Number of Propeller Wheels in Stock at Dry-Dock.

## Know Your Own Ship

is a book valuable to the Vessel Owner, Master, Naval Architect, and, in fact, all interested in vessel handling and construction.

A simple explanation of the stability, construction, tonnage and freeboard of ships. Specially arranged for the use of ships' officers, superintendents, draughtsmen and others. By Thomas Walton, naval architect; lecturer to ships' officers, government navigation school. Fourth edition greatly enlarged. Illustrated; cloth, \$2.50, by express prepaid.

THE MARINE RECORD,  
Third Floor, Western Reserve Building,  
Cleveland.



Anyone sending a sketch and description may quickly ascertain our opinion free whether an invention is probably patentable. Communications strictly confidential. Handbook on Patents sent free. Oldest agency for securing patents. Patents taken through Munn & Co. receive special notice, without charge, in the

**Scientific American.**

A handsomely illustrated weekly. Largest circulation of any scientific journal. Terms, \$3 a year; four months, \$1. Sold by all newsdealers.

**MUNN & Co.** 361 Broadway, New York  
Branch Office, 625 F St., Washington, D. C.

NAVIGATION. Theoretical and practical. By D. Wilson Barker, R. M. R., and William Allingham. Illustrated; 12 mo.; cloth, \$1.50 by mail prepaid.  
THE MARINE RECORD,  
Western Reserve Bldg. Cleveland, Ohio.

## The Nickel Plate Road

offers to students desiring to return home for the holidays, the special rate of one and one-third fare for the round trip. Tickets will be sold on the day school closes and the day immediately preceding; good returning to and including the date school reconvenes, but not later than January 10, 1900. 182-52

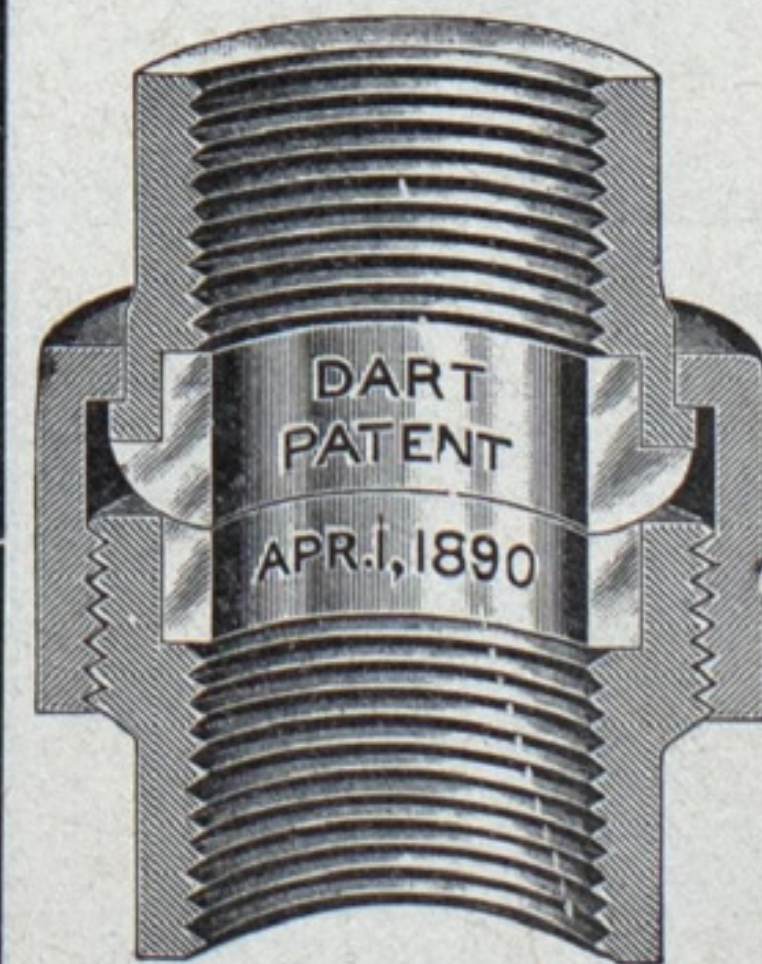
## Elementary Seamanship.

By D. Wilson Barker. Illustrated; 12 mo.; cloth, \$2.00 by mail prepaid.

THE MARINE RECORD,  
Western Reserve Bldg., Cleveland, Ohio.

Low Rates via C., T. & V. R. R.,  
account of Christmas and  
New Year Holidays.

Tickets on sale December 23, 24, 25, 30, 31, 1899, and January 1, 1900; good returning to and including January 2, 1900. For particulars call on C., T. & V. agents or address J. E. GALBRAITH, Traffic Manager, Cleveland, O.



The Best Union

Made in the U. S.

Mnfd by the  
**E. M. Dart Mfg. Co.**

Providence R. I.  
Send for circulars and prices.

